SBIR

Small Business Innovation Research

Notice of Funding Opportunity (NOFO)

FY2023

Funding Opportunity Number:	NOAA-OAR-TPO-2023-2007691
Assistance Listings or Catalog of Federal Domestic Assistance (CFDA) Number:	11.021 NOAA Small Business Innovation Research (SBIR) Program
Opening Date:	December 1, 2022
Letter of Intent Due Date	January 13, 2023
Closing Date:	March 17, 2023

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
http://www.techpartnerships.noaa.gov

EXECUTIVE SUMMARY

This notice identifies the objectives for the Small Business Innovation Research (SBIR) Phase I projects, deadlines, funding information, eligibility criteria, research topics, and application forms and associated instructions.

The U.S. Department of Commerce/National Oceanic and Atmospheric Administration Small Business Innovation Research (SBIR) Program awards early-stage funding to U.S. small businesses to catalyze technological innovation. NOAA's SBIR Program specifically aims to invest in high-impact emerging technology areas and support the research and development of commercializable technologies that solve problems related to climate, weather, oceans, and coasts. The NOAA SBIR Program runs an annual grant competition and provides education and other support to entrepreneurs throughout the process of researching, developing, and commercializing products or services.

The SBIR and STTR Extension Act of 2022 (https://www.congress.gov/bill/117th-congress/senate-bill/4900/text) reauthorizes through FY2025 and modifies the Small Business Innovation Research (SBIR) program, the Small Business Technology Transfer (STTR) program, and related pilot programs.

The bill requires agencies with an SBIR or STTR program to assess the security risks presented by applicants with financial ties or obligations to certain foreign countries. The programs may not make awards to businesses with certain connections to foreign entities. To comply with this requirement, the program will have applicants who are recommended for a 2023 SBIR Phase I award complete additional certifications disclosing ties to the People's Republic of China and other foreign countries prior to award and as needed during the life of the funding agreement.

These certifications will include:

- The identity of all owners and covered individuals of the small business concern who are a party to any foreign talent recruitment program of any foreign country of concern, including the People's Republic of China;
- The existence of any joint venture or subsidiary of the small business concern that is based in, funded by, or has a foreign affiliation with any foreign country of concern, including the People's Republic of China;
- Any current or pending contractual or financial obligation or other agreement specific to a business arrangement, or joint venture-like arrangement with an enterprise owned by a foreign state or any foreign entity;
- Whether the small business concern is wholly owned in the People's Republic of China or another foreign country of concern;
- The percentage, if any, of venture capital or institutional investment by an entity that has a general partner or individual holding a leadership role in such an entity who has a foreign affiliation with any foreign country of concern, including the People's Republic of China;
- Any technology licensing or intellectual property sales to a foreign country of concern, including the People's Republic of China, during the 5-year period preceding submission of the proposal; and
- Any foreign business entity, offshore entity, or entity outside the United States related to the small business concern.

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US DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
FY 2023 SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM
NOTICE OF FUNDING OPPORTUNITY (NOFO)

1.0 PROGRAM DESCRIPTION AND FEDERAL AWARD INFORMATION

1.1 Introduction

The Department of Commerce (DOC) National Oceanic and Atmospheric Administration (NOAA) invites small businesses to submit research proposals under this NOFO. Firms with the capability to conduct research and development (R&D) in any of the research topic areas listed in Section 9.0 of this announcement and to commercialize the results of that R&D are encouraged to participate. The Small Business Innovation Research (SBIR) Program is not a substitute for existing unsolicited proposal mechanisms. Unsolicited proposals are not accepted under the SBIR program.

Only FY 2023 Phase I applications may be submitted in response to this NOFO. **Phase II applications are not being accepted at this time**. NOAA will publish a Phase II NOFO approximately 30 days prior to the end of the previous year's Phase I period of performance to request Phase II applications. That NOFO will provide instructions for Phase I awardees to prepare a Phase II application and the closing date for submission of applications; only the previous year's Phase I awardees are eligible to submit a Phase II application.

The Small Business Innovation Research (SBIR) program was originally established in 1982 by the Small Business Innovation Development Act (P.L. 97-219), codified at 15 U.S.C. § 638. It was then expanded and extended by the Small Business Research and Development Enhancement Act of 1992 (P.L. 102-564), and received subsequent reauthorization and extensions, the most recent of which extends the SBIR program through 2025. (P.L. 117-183).

Each Federal agency with an extramural budget for research/research and Development (R/R&D) in excess of $100,000,000 must participate in the SBIR program and spend (obligate) a minimum percentage of their extramural R/R&D budgets (obligations) of not less than 3.2% of such budget in fiscal year 2017 and for the percentage required by statute for each fiscal year after for awards to small business concerns (SBCs) for R/R&D under the SBIR program. The objectives of the SBIR program are to: stimulate technological innovation in the private sector; strengthen the role of small business in meeting Federal R&D needs; foster and encourage participation by businesses owned by socially and economically disadvantaged persons and women-owned SBCs in technological innovation; and increase private sector commercialization of innovations derived from federal R&D funding.

Fostering diversity by encouraging the participation of individuals from nationally underrepresented groups in the scientific research workforce is longstanding interest of Congress, and a key component of NOAA's commitment to diversity, equity, inclusion, and accessibility (e.g., Public Law 114-329, American Innovation and Competitiveness Act of 2017, and https://tpo-dev.oar.woc.noaa.gov/abouttpo/dei-statement/). Increasing participation by socially and economically disadvantaged and women-owned small businesses is critical to the success of the SBIR program.

1.2 Three-Phase Program

The SBIR statute (15 U.S.C. § 638) requires the DOC to establish a three-phase SBIR program by reserving a percentage of its extramural R&D budget to be awarded to SBCs R&D. SBIR policy is provided by the Small Business Administration (SBA) through the SBIR Policy Directive found at http://www.sbir.gov. The NOAA specific program authority will vary depending on the nature of the proposed project. A list of the most prevalent assistance authorities are 15 U.S.C. 1540; 16 U.S.C. 661 et seq.; 16 U.S.C. 1456c; 15 U.S.C. 2901 et. seq.; 33 U.S.C. 883a-d; 33 USC 893a; 33 U.S.C. 1442; 49 U.S.C. 44720(b).

The NOAA SBIR program identifies and solicits proposals on topics that fall within NOAA's mission. NOAA has the unilateral right to select SBIR research topics and awardees in both Phase I and Phase II and award several or no grants under a given topic. All awards are subject to the availability of funds. NOAA is not responsible for any costs expended by the applicant in the development of the proposal and prior to award. Only proposals that are directly responsive to the research topics as described in Section 9.0 will be considered.

1.2.1 Phase I – Feasibility Research

The purpose of Phase I is to determine the scientific, technical, and commercial merit and feasibility of the proposed research and the quality of performance of the SBC receiving an award. The Phase I proposal should focus on research that will significantly contribute to evaluating the feasibility of the project, a prerequisite to further support in Phase II. Applicants are strongly encouraged to consider, and discuss in their proposal, the commercial application and private sector potential for the proposed effort.

NOAA Phase I awards provide up to $175,000 with up to a six (6) month period of performance. While the number of awards are dependent on NOAA's budget, in a typical fiscal year, NOAA anticipates providing up to 25 SBIR Phase I awards. To accommodate the Phase II award process, **no-cost extensions are not permitted in Phase I projects that intend to advance to Phase II**. If an awardee requests a no-cost extension for the Phase I project, the awardee will be ineligible to submit an application for Phase II.

1.2.2 Phase II – Research and Development

In Phase II, work from Phase I that exhibits potential for commercial application is further developed. Phase II is the R&D or prototype development phase. To apply for a Phase II award, each Phase I awardee will be required to submit a comprehensive application outlining the proposed research and a detailed plan to commercialize the final product.

NOAA Phase II awards provide approximately up to $650,000 with up to a twenty-four (24) month period of performance. For planning purposes, NOAA's goal is to make Phase II awards around July of fiscal year 2024.

All Phase I awardees that receive grant funding under this NOFO and remain in compliance with the Terms and Conditions of the Phase I award will be given the opportunity to submit a Phase II application following completion of Phase I. Instructions for Phase II application preparation and submission requirements will be published in a separate NOFO to be released approximately 30 days prior to the end of the Phase I performance period.

1.2.3 Phase III – Commercialization

Under Phase III, the small business entity obtains funding from either the private sector, a non-SBIR Government source, or both, to commercialize the SBIR research or technology. SBIR Phase III includes work that derives from, extends, or completes an effort made under prior SBIR funding agreements but is funded by sources other than the SBIR Program.

1.3 Manufacturing-Related Priority

Executive Order (EO) 13329 "Encouraging Innovation in Manufacturing" requires SBIR agencies, to the extent permitted by law and in a manner consistent with the mission of that department or agency, to give high priority within the SBIR programs to manufacturing-related R&D. "Manufacturing-related" is defined as "relating to manufacturing processes, equipment and systems; or manufacturing workforce skills and protection."

The NOAA SBIR Program solicits manufacturing-related projects through many of the topics described in this NOFO. Further, NOAA encourages innovation in manufacturing by giving high priority, where feasible, to projects that can help the manufacturing sector through technological innovation in a manner consistent with NOAA's mission. This prioritization will not interfere with the core project selection criteria: scientific and technical merit and the potential for commercial success.

1.4 Energy Efficiency and Renewable Energy Priority

The Energy Independence and Security Act of 2007 (P.L. 110-140) directs SBIR Programs to give high priority to SBCs that participate in or conduct energy efficiency or renewable energy system R&D projects.

The NOAA SBIR Program solicits energy efficiency or renewable energy system R&D projects through many of the topics described in this NOFO. Further, NOAA encourages innovation in energy efficiency or renewable energy system R&D by giving high priority, where feasible, to projects that conduct energy efficiency or renewable energy system R&D through technological innovation in a manner consistent with NOAA's mission. This prioritization will not interfere with the core project selection criteria: scientific and technical merit and the potential for commercial success.

1.5 SBIR Applicant Eligibility and Limitation

1.5.1 Applicant Qualification

Each applicant must qualify as a SBC for R/R&D purposes, as defined in Section 1.5 of this NOFO, at the time of the award and at any other time set forth in the SBA's regulations at 13 CFR 121.701- 121.705. Each awardee, at the time of the award (but not at the time of the application), must submit a certification (See Appendix B) stating that it meets the size, ownership, and other requirements of the SBIR Program and at any other time set forth in SBA's regulations at 13 CFR 121.701-705 in order to qualify for the award.

In addition, the primary employment of the principal investigator (PI) must be with the SBC at the time of the award and during the conduct of the proposed project. Primary employment means that at least 51% of the Principal Investigator's (PI's) time is spent in the employ of the SBC. Primary employment with a SBC precludes

full-time employment with another organization. Further, an SBC may only replace the principal investigator on a SBIR Phase I award if the NOAA Grants Officer provides prior written approval.

The R/R&D work must be performed in the United States. Requests for an exemption must be submitted in writing prior to application submission. Only rare and unique circumstances will be considered for an exemption. The NOAA Grants Officer must approve each exemption and its terms in writing.

For Phase I, a minimum of two-thirds of the research and/or analytical effort must be performed by the awardee. The total cost for all consultant fees, facility leases, usage fees, and other subcontract/sub-award or purchase agreements may not exceed one-third of the total award.

Applicants (and any affiliated individuals) may not participate in the selection of any topic. Additionally, they may not participate in the review of proposals. All associated entities to applicants to this NOFO (including Guest Researchers, Cooperative Research and Development Agreement (CRADA) partners and others working with NOAA) may only submit a proposal if they:

- Had no role in developing or reviewing the topic;
- Have not been the recipient of any information on the topic not available in the NOFO or by other public means; and
- Have not received any assistance from DOC in preparing the proposal for this specific NOFO (including any 'informal' reviews) prior to submission.

NOAA may not enter into, or continue, an existing CRADA with an awardee under this program.

Each applicant will be required to provide certain information via www.sbir.gov as well as other information required by the SBIR Policy Directive *(see* Appendices V-VI), found at https://www.sbir.gov/sites/default/files/SBA_SBIR_STTR_POLICY_DIRECTIVE_OCT_2020_v2.pdf. Each SBC applying for an award is required to update the appropriate information in SBIR.gov for any of its existing and prior SBIR awards.

Venture Capital Participation: NOAA elects not to use the authority that would allow venture capital operating companies (VCOCs), hedge funds, or private equity firms to participate in the SBIR Program. Applications in which work would be performed by VCOCs will not be considered for award.

1.5.2 Submitting Letters of Intent

A single Letter of Intent (LOI) is required for each application and must be received by the deadline indicated on the cover of this NOFO. **Only those proposals for which an LOI has been received by the due date are eligible to submit an application under this NOFO**. LOIs should be submitted via the FY23 NOAA SBIR Letter of Intent Submission Form, which can be found at https://techpartnerships.noaa.gov/noaa-fy23-sbir-loi. Confirmation of submission will be received by email to the submitter's email address entered in the form. In response to submission of the LOI, the NOAA SBIR program will provide feedback indicating if an application is likely to be nonresponsive to the NOFO.

Applicants are limited to submitting a total of 5 different LOIs under this NOFO, and each LOI must be uniquely responsive to the NOFO. Applicants should not submit multiple letters of intent for different applications of the same technology. Duplicate LOIs (those containing essentially similar abstracts) will not be accepted to this NOFO; only the last submission will be accepted. If more than 5 LOIs are received from one applicant under this

NOFO, only the last 5 LOIs received will be accepted. Please refer to Section 3.2 for additional LOI content guidance.

1.5.3 Company Registry Requirements

SBA maintains and manages a Company Registry at http://www.sbir.gov/registration to track ownership and affiliation requirements for all companies applying to the SBIR Program. **Each Phase I applicant must register in the Company Registry prior to submitting an application. The applicant must save its information from the registration in a .pdf document and append this document to the SF-424 form as described at the end of Section 8.1 of this NOFO.** All applicants are required to report and/or update their registration information in the SBA Company Registry prior to each SBIR application submission or if any information changes prior to an award.

1.5.4 Performance Benchmark Ratings Requirements

All Phase I applicants with a current SBA assessment of their *Phase I to Phase II Transition Rate* must, at the time of the application under this FY23 NOFO, have satisfied the requirements of that Performance Benchmark to be eligible for a new Phase I award. NOAA will automatically disqualify proposals from firms that are currently ineligible for Phase I awards as a result of failing to meet the benchmark rate at the last assessment. For additional information, see Appendix F.

1.6 Contact with NOAA

For general programmatic, electronic submission, or grants questions, please contact the appropriate individual:

Subject Area	Point of Contact
Programmatic Questions – SBIR Program Office	Dr. Genevieve Lind Email: noaa.sbir@noaa.gov Subject Line: NOAA-OAR-TPO-2023-2007691
Electronic Application Submission through Grants.gov at https://www.grants.gov	Grants.gov Phone: 1-800-518-4726 Email: support@grants.gov
Grant Administrative Rules and Regulations	Raishan Adams Email: raishan.adams@noaa.gov

1.7 Fraud, Waste and Abuse

Prevention of Fraud, Waste, and Abuse is very important to the NOAA SBIR program. All applicants must complete the DOC OIG agency mandatory training and submit the certification of completion along with their application. The Fraud, Waste, and Abuse training can be found at: https://www.techpartnerships.noaa.gov/Portals/10/Documents/DOC%20SBIR%20Mandatory%20Training%20Slides%20and%20Certification%20Form.pdf?ver=2017-10-11-153838-617&timestamp=1514477649177.

Certification can be found at the end of the training module. All applicants must print, sign, and submit certification of completion as an attachment to their application (See Section 8.1).
As defined in the SBIR Policy Directive section 9(f), fraud includes any false representation about a material fact or any intentional deception designed to deprive the United States unlawfully of something of value or to secure from the United States a benefit, privilege, allowance, or consideration to which an individual or business is not entitled. Waste includes extravagant, careless, or needless expenditure of Government funds, or the consumption of Government property, that results from deficient practices, systems, controls, or decisions. Abuse includes any intentional or improper use of Government resources, such as misuse of rank, position, or authority or resources. Examples of fraud, waste, and abuse relating to the SBIR Program include, but are not limited to:

i. misrepresentations or material, factual omissions to obtain, or otherwise receive funding under, an SBIR award;
ii. misrepresentations of the use of funds expended, work done, results achieved, or compliance with program requirements under an SBIR award;
iii. misuse or conversion of SBIR award funds, including any use of award funds while not in full compliance with SBIR Program requirements, or failure to pay taxes due on misused or converted SBIR award funds;
iv. fabrication, falsification, or plagiarism in applying for, carrying out, or reporting results from an SBIR award;
v. failure to comply with applicable federal costs principles governing an award;
vi. extravagant, careless, or needless spending;
vii. self-dealing, such as making a sub-award to an entity in which the PI has a financial interest;
viii. acceptance by agency personnel of bribes or gifts in exchange for grant or contract awards or other conflicts of interest that prevents the Government from getting the best value; and
ix. lack of monitoring, or follow-up if questions arise, by agency personnel to ensure that awardee meets all required eligibility requirements, provides all required certifications, performs in accordance with the terms and conditions of the award, and performs all work proposed in the application.

Report any allegations of fraud, waste and abuse using the online Department of Commerce Office of Inspector General Complaint Form, available at https://www.oig.doc.gov/Pages/Hotline.aspx or send an e-mail to: hotline@oig.doc.gov.

Note: Because the Internet is not secure, it is possible, though unlikely, that e-mail complaints may be read by persons other than your intended source. If you are concerned about this, you may choose to call or mail. Contact information for the Office of Inspector General is available at: https://www.oig.doc.gov/pages/Contact-Us.aspx.

Please do not include Personally Identifiable Information (PII) through the website or via email. PII is considered to be items containing Social Security numbers, dates of birth, credit card and passport numbers, or other personally identifying information that could adversely affect an individual. Web submissions and e-mails containing such information will be blocked by our system administrator and will not be processed by our Complaint Department. Should you desire to provide this information, please contact the Hotline by telephone at the numbers listed below.

Phone:

Toll Free 800-424-5197
In the DC metro area 202-482-2495 TTD Toll Free 855-860-6950
TTD in the DC metro area 202-482-5923

Mail:

Office of Inspector General
Complaint Intake Unit, Mail Stop 7886 1401 Constitution Avenue, N.W. Washington, DC 20230

Fax:

855-569-9235

1.8 Other Information

1.8.1 Personal and Business Information

The applicant acknowledges and understands that information and data contained in applications for financial assistance, as well as information and data contained in financial, performance and other reports submitted by applicants, may be used by the DOC in conducting reviews and evaluations of its financial assistance programs. For this purpose, applicant information and data may be accessed, reviewed, and evaluated by DOC employees, other Federal employees, and also by Federal agents and contractors, and/or by non-Federal personnel, all of whom enter into appropriate conflict of interest and confidentiality agreements covering the use of such information. As may be provided in the terms and conditions of a specific financial assistance award, applicants are expected to support program reviews and evaluations by submitting required financial and performance information and data in an accurate and timely manner, and by cooperating with the DOC and external program evaluators. In accordance with 2 C.F.R.§ 200.303(e), applicants are reminded that they must take reasonable measures to safeguard protected personally identifiable information and other confidential or sensitive personal or business information created or obtained in connection with a DOC financial assistance award.

In addition, DOC regulations implementing the Freedom of Information Act (FOIA), 5 U.S.C. Sec. 552, are found at 15 C.F.R. Part 4, Public Information. These regulations set forth rules for the Department regarding making requested materials, information, and records publicly available under the FOIA. Applications submitted in response to this NOFO may be subject to requests for release under the Act. In the event that an application contains information or data that the applicant deems to be confidential commercial information that should be exempt from disclosure under FOIA, that information should be identified, bracketed, and marked as Privileged, Confidential, Commercial or Financial Information. In accordance with 15 CFR § 4.9, the DOC will protect from disclosure confidential business information contained in financial assistance applications and other documentation provided by applicants to the extent permitted by law.

2.0 CERTIFICATIONS

2.1 Funding Agreement Certifications

Awardees will be required to certify size, ownership, and other SBIR Program requirements at the time of award and during the funding agreement life cycle using the “SBIR Funding Agreement Certification (At Time of Award)” and the “SBIR Funding Agreement Certification (Life-Cycle Certification)”, which are provided in Appendix B and Appendix C of this NOFO, respectively. The Life-Cycle Certification must be submitted at the time of final payment or disbursement to verify compliance with specific SBIR/STTR program requirements.

2.2 Research Activities Involving Human Subjects, Human Tissue, Data or Recordings Involving Human Subjects

2.2.1 Protection of Human Subjects

Any application that includes participation in research involving human subjects, human tissue/cells, data or recordings involving human subjects must meet the requirements of the Common Rule for the Protection of Human Subjects ("Common Rule"), codified for the DOC at 15 C.F.R. Part 27. In addition, any such proposal that includes research on these topics must be in compliance with any statutory requirements imposed upon the Department of Health and Human Services (DHHS) and other Federal agencies regarding these topics, all regulatory policies and guidance adopted by DHHS, the Food and Drug Administration (FDA), and other Federal agencies on these topics, and all Executive Orders and Presidential statements of policy on these topics.

NOAA reserves the right to make an independent determination of whether an applicant's research involves human subjects. If NOAA determines that your research project involves human subjects, you will be required to provide additional information for review and approval. If an award is issued, no research activities involving human subjects shall be initiated or costs incurred under the award until the NOAA Grants Officer issues written approval. Retroactive approvals are not permitted.

NOAA will accept applications that include research activities involving human subjects that have been or will be approved by an Institutional Review Board (IRB) currently registered with the Office for Human Research Protections (OHRP) within the DHHS and that will be performed by entities possessing a currently valid Federal wide Assurance (FWA) on file from OHRP that is appropriately linked to the cognizant IRB for the protocol. Information regarding how to apply for a FWA and register an IRB with OHRP can be found at: http://www.hhs.gov/ohrp/assurances/index.html.

Generally, NOAA does not fund research involving human subjects in foreign countries. NOAA will consider, however, the use of preexisting tissue, cells, or data from a foreign source on a limited basis if all of the following criteria are satisfied:

1. the scientific source is considered unique;
2. an equivalent source is unavailable within the United States;
3. an alternative approach is not scientifically of equivalent merit; and
4. the specific use qualifies for an exemption under the Common Rule.

Any award issued by NOAA is required to adhere to all Presidential policies, statutes, guidelines, and regulations regarding the use of human embryonic stem cells. The DOC follows the National Institutes of Health (NIH) Guidelines by supporting and conducting research using only human embryonic stem cell lines that have been approved by NIH in accordance with the NIH Guidelines. Detailed information regarding NIH Guidelines for stem cells is located on the NIH Stem Cell Information website: http://stemcells.nih.gov. The DOC will not support or conduct any type of research that the NIH Guidelines prohibit NIH from funding. The DOC will review research using human embryonic stem cell lines that it supports and conducts in accordance with the Common Rule and NOAA implementing procedures, as appropriate.

Any request to support or conduct research using human embryonic stem cell lines not currently approved by the NIH, will require that the owner, deriver, or licensee of the human embryonic stem cell line apply for and receive approval of the registration of the cell line through the established NIH application procedures: http://hescregapp.od.nih.gov/NIH_Form_2890_Login.htm. Due to the timing, uncertainty associated with establishing an embryonic stem cell line in the NIH registry, the use of existing human embryonic stem cell lines in the NIH Embryonic Stem Cell Registry may be preferred by applicants or current award recipients. The NIH

Embryonic Stem Cell Registry is located at: http://grants.nih.gov/stem_cells/registry/current.htm.

An applicant or current award recipient proposing to use a registered embryonic stem cell line will be required to document an executed agreement for access to the cell line with the provider of the cell line and acceptance of any established restrictions for use of the cell line, as may be noted in the NIH Embryonic Stem Cell Registry.

If the proposal includes exempt and/or non-exempt research activities involving human subjects the following information is required in the application:

1. The name(s) of the institution(s) where the research will be conducted;
2. The name(s) and institution(s) of the cognizant IRB(s), and the IRB registration number(s);
3. The FWA number of the applicant linked to the cognizant IRB(s);
4. The FWAs associated with all organizations engaged in the planned research activity linked to the cognizant IRB;
5. If the IRB review(s) is pending, the estimated start date for research involving human subjects;
6. The IRB approval date (if currently approved for exempt or non-exempt research); and
7. If any FWAs or IRB registrations are being applied for, that should be clearly stated.

Additional documentation may be requested, as warranted, during review of the proposal, but may include the following for research activities involving human subjects that are planned in the first year of the award:

1. A signed (by the study principal investigator) copy of each applicable final IRB-approved protocol;
2. A signed and dated approval letter from the cognizant IRB(s) that includes the name of the institution housing each applicable IRB, provides the start and end dates for the approval of the research activities, and any IRB-required interim reporting or continuing review requirements;
3. A copy of any IRB-required application information, such as documentation of approval of special clearances (i.e. biohazard, HIPAA, etc.) conflict-of-interest letters, or special training requirements;
4. A brief description of what portions of the IRB submitted protocol are specifically included in the proposal submitted to NOAA, if the protocol includes tasks not applicable to the proposal, or if the protocol is supported by multiple funding sources. For protocols with multiple funding sources, NOAA will not approve the study without a non-duplication-of-funding letter indicating that no other federal funds will be used to support the tasks proposed under the proposed research or ongoing project;
5. If a new protocol will only be submitted to an IRB if an award from NOAA issued, a draft of the proposed protocol may be requested; and
6. Any additional clarifying documentation that NOAA may request during review of proposals to perform the NOAA administrative review of research involving human subjects. (*See* 15 C.F.C. § 27.112 (Review by Institution)).

2.2.2 IRB Education Documentation

A signed and dated letter is required from the Organizational Official who is authorized to enter into commitments on behalf of the organization documenting that appropriate IRB education has been received by the Organizational Official, the IRB Coordinator or such person that coordinates the IRB documents and materials if such a person exists, the IRB Chairperson, all IRB members, and all key personnel associated with the application. The NOAA requirement of documentation of education is consistent with NIH notice OD-00-039 (June 5, 2000). Although NOAA will not endorse an educational curriculum, there are several curricula that are available to organizations and investigators that may be found at: http://grants.nih.gov/grants/guide/notice-files/NOT-OD-00-039.html

2.3 Research Project Involving Live Vertebrate Animals

Any proposal that includes research involving live vertebrate animals must be in compliance with the "U.S. Government Principles for Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training" (Principles). The Principles and guidance on these Principles are available in the National Research Council's "Guide for the Care and Use of Laboratory Animals,'' which can be obtained from National Academy Press, 500 5th Street, N.W., Department 285, Washington, DC 20055, or as a free PDF online at http://www.nap.edu/catalog/12910/guide-for-thecare-and-use-of-laboratory- animals-eighth. In addition, such proposals must meet the requirements of the Animal Welfare Act (AWA) (7 U.S.C. § 2131 et seq.), the AWA rules (9 C.F.R. Parts 1, 2, and 3), and if appropriate, the Good Laboratory Practice for Nonclinical Laboratory Studies (21 C.F.R Part 58). These regulations do not apply to proposed research using pre existing images of animals or to research plans that do not include live animals that are being cared for, euthanized, or used by the project participants to accomplish research goals, teaching, or testing. These regulations also do not apply to obtaining animal materials from commercial processors of animal products or to animal cell lines or tissues from tissue banks.

NOAA reserves the right to make an independent determination of whether your research involves live vertebrate animals. If NOAA determines that your research project involves live vertebrate animals, you will be required to provide additional information for review and approval. If an award is issued, no research activities involving live vertebrate animal subjects shall be initiated or costs incurred under the award until the NOAA Grants Officer issues written approval.

If the proposal includes research activities involving live vertebrate animals, the following information is required in the proposal:

1. The name(s) of the institution(s) where the animal research will be conducted;
2. The assurance type and number, as applicable, for the cognizant Institutional Animal Care and Use Committee (IACUC) where the research activity is located, [for example: Animal Welfare Assurance from the Office of Laboratory Animal Welfare (OLAW) should be indicated by the OLAW assurance number, i.e. A- 1234; a USDA Animal Welfare Act certification should be indicated by the certification number i.e. 12-R-3456; and an Association for the Assessment and Accreditation of Laboratory Animal Care (AAALAC) should be indicated by AAALAC];
3. The IACUC approval date (if currently approved);
4. If the review by the cognizant IACUC is pending, the estimated start date for research involving vertebrate animals; and
5. If any assurances or IACUCs need to be obtained or established, that should be clearly stated.

Additional documentation will be requested, as warranted, during review of the proposal, but may include the following for research activities involving live vertebrate animals that are planned in the first year of the award:

1. A signed (by the Principal Investigator) copy of the IACUC approved Animal Study Proposal (ASP);
2. Documentation of the IACUC approval indicating the approval and expiration dates of the ASP; and
3. If applicable, a non-duplication-of-funding letter if the ASP is funded from several sources;
4. If a new ASP will only be submitted to an IACUC if an award from NOAA issued, a draft of the proposed ASP may be requested; and
5. Any additional clarifying documentation that NOAA may request during review of proposals to perform the NOAA administrative review of research involving live vertebrate animals.

3.0 APPLICATION PREPARATION INSTRUCTIONS AND REQUIREMENTS

3.1 Phase I Application Requirements

All applicants are required to submit a Letter of Intent (LOI) by the date indicated on the cover of the NOFO prior to submission of a full proposal. See section 3.2 for instructions on submitting the LOI.

For Phase I full application submission, applicants should use the SBIR forms in Appendix D, E, and F to ensure that eligibility requirements are met and that all required information is submitted.

A proposal must be self-contained and written with all the care and thoroughness of a scientific paper submitted for publication. It should indicate a thorough knowledge of the current status of research in the topic area addressed by the proposal. Each proposal should be checked carefully by the applicant to ensure inclusion of all essential material needed for a complete evaluation. The proposal will be peer reviewed as a scientific paper. All units of measurement should be in the metric system.

The applicant must provide sufficient information to demonstrate that the proposed work represents a sound approach to the investigation of an important scientific or engineering innovation worthy of support. The proposal must not only be responsive to the specific NOAA program interests described in Section 9.0 Research Topics of this NOFO but also serve as the basis for technological innovation leading to new commercial products, processes, or services that benefit the public. Applications principally for the commercialization of proven concepts or for market research shall not be submitted for Phase I funding, since such efforts are not considered to be R/R&D and are the responsibility of the private sector.

The proposal should be direct, concise, and informative. Promotional and other material not related to the project should be omitted. **Do not include hyperlinks to websites or other resources.**

Only FY 2023 Phase I applications may be submitted in response to this NOFO. Phase II applications are not being accepted at this time.

All applicants are required to provide information for SBA's database (www.sbir.gov). The following are examples of the data to be entered by applicants into the database:

- Any business concern or subsidiary established for the commercial application of a product or service for which an SBIR award is made;
- Revenue from the sale of new products or services resulting from the research conducted under each Phase II award;
- Additional investment from any source, other than Phase I or Phase II awards, to further the research and development conducted under each Phase II award;
- Updated information in the SBA database on sbir.gov for any prior award received by the SBC. The SBC may apportion sales or additional investment information relating to more than one Phase II award among those awards, if it notes the apportionment for each award; and
- All awardees are required to update appropriate information on the award in the database upon completion of the last program objective under the funding agreement and are requested to voluntarily update the information in the database annually thereafter for a minimum period of five years.

3.2 Letter of Intent

A letter of intent (LOI) is **required** and must be submitted by the SBC by the date indicated on the cover of the NOFO. Only proposals for which the applicant has submitted an LOI to NOAA by the due date are eligible to submit an application under this NOFO.

Preparing a Letter of Intent (LOI)

When submitting an LOI, all submitters must provide the following:

- Small Business Information
    - Name, address
    - Authorized Representative
    - Unique Entity Identifier Number, if available
    - Principal Investigator
- Proposed NOAA Topic Area: See Research Topics, Section 9.0
- Proposed Project Title: A descriptive title of the planned R&D. The Proposed Project Title should be descriptive of the proposed research and not include redundant phrases such as “Phase I” or “Letter of Intent”. Note: **The full Phase I grant application must have the same title**.
- Technical abstract that describes the technology and application in sufficient detail to evaluate responsiveness to NOAA topics and priorities.
    - The abstract should not exceed 500 words, and it must provide sufficient technical depth to allow NOAA to assign scientific reviewers for your application. Please note that your abstract should not contain any proprietary information.
- Brief description of the commercial potential and application for the proposed technology.

The technical abstract will be used to assign scientific experts as reviewers of the full application. As such, the innovation described in the LOI technical abstract and the full application should be substantially the same. Significant differences in the proposed innovation from that described in the technical abstract may result in NOAA’s removal of the application from consideration during initial review.

Restrictions

A small business may submit a maximum of 5 LOIs for each NOFO. If more than 5 LOIs are submitted, the 5 last LOIs will be used. Applicants should not submit multiple letters of intent for different applications of the same technology. Duplicate LOIs (those containing essentially similar abstracts) will not be accepted to this NOFO; only the last submission will be accepted.

LOI Submission

All LOIs should be submitted electronically through the form found at FY23 NOAA SBIR Letter of Intent Submission Form and also available at https://techpartnerships.noaa.gov/noaa-fy23-sbir-loi. Enter the Small Business name and address, Name of Authorized Representative, and Proposed Topic Area (See Section 9.0 for topics), Project Title, Technical Abstract, and Description of Commercial Potential. The project title should be descriptive of the proposed research and not include redundant phrases such as “Phase I” or “Letter of Intent”. The information entered here will be used to assign the LOI to topic areas. **Note:** The full Phase I grant application must have the same title. Confirmation of submission will be received by email to the submitter's email address entered in the form. Late LOI submissions will not be accepted. Applicants should check Grants.gov periodically for changes in due dates.

LOI Feedback
In response to submission of the LOI, the NOAA SBIR program will provide feedback indicating if an application is likely to be nonresponsive to the NOFO. If an applicant receives feedback that their submission appears to be non-responsive, it does not preclude that applicant from submitting a full Phase I grant proposal, though responsiveness is a key component of the full application review process and score. Full applications will be encouraged only for LOIs deemed most relevant to this announcement's priorities and relevant to NOAA's mission. NOAA anticipates providing the feedback via email within 4 weeks of the LOI deadline. LOIs must be submitted by eligible small business applicants only.

3.3 Phase I Application

A complete application must include a Project Narrative (described below) and all other forms and documents listed in Section 8.1 of this NOFO.

An applicant may submit an LOI and application to multiple topics or more than one LOI and application on one topic under this NOFO. When the proposed innovation applies to more than one topic, the applicant must submit its application under the topic that is most relevant to the applicant's technical concept. Applications on multiple topics or multiple applications to the same topic must be clearly differentiated. A small business may submit a maximum of 5 LOIs for each NOFO. If more than 5 LOIs are submitted, the 5 last LOIs will be used.

The Project Narrative portion of the application requires the following:

a. **SBIR Phase I Cover Page** pages 1 and 2 (Appendix D);
b. **Project Abstract** page 3; and
c. **Technical Content** pages 4 through 15.

The Project Narrative, including the Cover Page, Project Abstract, and Technical Content, is limited to 15 pages, including references cited. The only exception to the 15-page limit is for SBCs addressing the requirement related to prior SBIR Phase II Awards as listed in Section 3.3 (14). Additional pages beyond the 15-page limit will not be considered in the evaluation process. Pages should be of standard size (8 1/2” x 11”; 21.6 cm x 27.9 cm) with margins of 2.5 cm and type at least 10-point font.

A list of all forms and documents needed to complete the application is provided in Section 8.1 of this NOFO. The additional required forms and documents listed in Section 8.1 are not included in the 15-page count.
See Section 6.0 for instructions on how to submit applications in response to this NOFO.

3.3.1 SBIR Cover Page and Project Abstract

SBIR Cover Page
A completed SBIR Cover Page is a required part of the Project Narrative. The Cover Page is counted as pages 1 and 2 of the Project Narrative (Appendix D, available as a fillable for at https://techpartnerships.noaa.gov/sbir/awardee-resources/applicants/).

Project Abstract
Applicants are required to include a one-page project summary of the proposed R/R&D including at least the following:

(1) Name and complete address of SBC;
(2) Name and title of Principal Investigator;
(3) Participating Agency name, Program Solicitation number, and Program Solicitation topic;
(4) Title of project;
(5) Technical abstract limited to two hundred words; and/or
(6) Summary of the anticipated results and implications of the approach and the potential commercial applications of the research.

Each project abstract will be provided to the SBA and should not contain proprietary information. Awardee's abstract and summary of potential commercial applications will be published on the NOAA SBIR website and SBIR.gov. The Project Abstract is counted as page 3 of the Project Narrative.

3.3.2 Technical Content

Beginning on page 4 of the application, the following sections are required: (**All headings must be included. If a particular section does not apply, please include the heading, followed by N/A**). If you are re-submitting an idea that you submitted to a previous NOAA SBIR solicitation, please address reviewers' comments within the sections of the technical content indicated below, as appropriate.

1. **Identification and Significance of the Problem or Opportunity.** Provide a clear statement of the specific research problem or opportunity addressed, its innovativeness, commercial potential, and explanation of importance. Explain how it applies to a specific research topic in Section 9 and fulfills the NOAA mission.

2. **Phase I Technical Objectives.** State the specific objectives of the Phase I research and development effort, including the technical questions it will try to answer, to determine the feasibility of the proposed approach.

3. **Phase I Work Plan**. Include a detailed description of the Phase I feasibility research plan. The plan should indicate what will be done, where it will be done, and how the research will be carried out. The method(s) planned to achieve each objective or task should be discussed in detail.

4. **Related R/R&D.** Describe previous significant R/R&D efforts that are directly related to the application, including any prior research conducted by the PI or the proposing SBC. Describe how the R/R&D relates to the proposed effort, and include any planned coordination with outside sources. The applicant must persuade evaluators of his or her awareness of key, recent R/R&D conducted by others in the specific research topic area.

5. **Key Individuals and Bibliography of Related Work.** Identify key individuals involved in Phase I, including their related education, experience, and publications. Where vitae are extensive, summaries that focus on the most relevant experience and publications are desired and may be necessary to meet application size limitations.

6. **Relationship with Future R/R&D.** Discuss the significance of the Phase I effort in providing a foundation for the Phase II R/R&D effort. Also state the anticipated results of the proposed approach if Phases I and II of the project are successful.

7. **Facilities and Equipment.** A detailed description, availability, and location of instrumentation and physical facilities proposed for Phase I should be provided.

8. **Consultants, Contracts, and Sub-awards.** The purpose of this section is to show that any third-party research assistance would materially benefit the proposed effort and that arrangements for such assistance are in place at time of application submission. It is important that these individuals be clearly identified as consultants, sub-awardees, or subcontractors. This should match and be reflected in the budget tables and budget narrative sections.

   For Phase I, a minimum of two-thirds of the research and/or analytical effort must be performed by the awardee. Outside involvement in the project is encouraged where it strengthens the conduct of the research but is not a requirement of the program. The total cost for all consultant fees, facility leases, usage fees, and other subcontract/sub-award or purchase agreements may not exceed one-third of the total award.

   No individual or entity may serve as consultant, contractor, or sub-recipient if they: (a) had any role in suggesting, developing, or reviewing the NOAA research topic; or (b) have been the recipient of any NOAA information on the research topic not available to the public.
   The following definitions apply to this NOFO:
   - Consultant - A person outside the firm, named in the application as contributing to the research, must provide a signed statement confirming his/her availability, role in the project, and agreed consulting rate for participation in the project.
   - Contract - Similarly, where a contract is involved in the research, the contractor institution must furnish a letter signed by an appropriate official describing the programmatic arrangements and confirming its agreed participation in the research, with its proposed budget for this participation.
   - Sub-awards - As the funding instrument used in this program is financial assistance, an awardee might pass through funds to another organization to carry out part of the Federally-supported project. A "sub-award" relationship fits the circumstances more appropriately than a contract to carry out part of the Federally-supported project. *See* 2 CFR §§ 200.1 (sub-award), 200.1 (sub-recipient), and 200.331 (Sub-recipient and contractor determinations), respectively.

   The **applicant must include Letters of Commitment** from any participating consultants, subawards, or subcontractors signed by an appropriate official of that institution describing the programmatic arrangements and confirming its agreed participation in the research, with its proposed budget and budget justification for this participation included as attachments as part of the application package.

9. **Potential Commercial Application.** Describe in detail the commercial potential of the proposed research, how commercialization would be pursued, and how the product or service would potentially be used. Include any optional letters of support and relevant supporting material such as references to journal articles, literature, or government publications. Letters of support should be submitted as attachments as part of the application package (See section 8.1). Provide any indicators of commercial potential and address the following:
   - Market opportunity – Describe the current and anticipated target market and the size of the

market, and include a brief profile of the potential customer(s);

- Technology and competition – Describe the competitive landscape, value proposition, and competitive advantage of the product or service enabled by the proposed innovation. Also include what critical milestones must be met to get the product or process to market and the resources required to address the business opportunity; and
- Finances – Describe your strategy for financing the innovation beyond the SBIR award. Describe the existence of any outside, non-SBIR funding or partnering commitments including any Phase II funding commitments from private sector or non-SBIR funding sources and/or the existence of Phase III follow-on commitments for the subject research.

10. **Cooperative Research and Development Agreements (CRADA).** State if the applicant is a current CRADA partner with NOAA, or with any other Federal agency, naming the agency, title of the CRADA, and any relationship with the proposed work. An Agency may NOT enter into, or continue, a CRADA with an awardee under this NOFO on the subtopic of the award.

11. **Guest Researcher.** State if the applicant or any of its consultants or subcontractors is a guest researcher at NOAA, naming the sponsoring laboratory.

12. **Cost Sharing.** Cost sharing is not required and is not considered during the evaluation process for Phase I applications. Cost sharing or matching funds are not to be included in the Research and Related Budget form. The amount and planned use of these funds can be described in the technical narrative.

13. **Similar Applications or Awards. WARNING --** While it is permissible to submit identical applications or applications containing a significant amount of essentially equivalent work for consideration under numerous Federal program funding announcements, **it is unlawful to enter into a funding agreement requiring essentially equivalent work to an SBIR award (*see* 15 U.S.C. § 638(bb)(3**)). If no equivalent application is under consideration or award for equivalent work received, a statement to that effect must be included in this section of the technical content area of the application. If there is any question concerning this, it must be disclosed to the soliciting agency or agencies before award.

    If an application submitted in response to this NOFO is substantially the same as another application that has been funded, is now being funded, or is pending with another Federal Agency, the applicant must provide the following information:

    a. Names and addresses of agencies to which an application was submitted or from which an award was received;
    b. Date of application submission or date of award;
    c. Title, number, and date of NOFO(s) under which an application was submitted or award received;
    d. Specific applicable research topic(s) for each application submitted or award received;
    e. Title of research projects for each application submitted or award received; and
    f. Name and title of principal investigator or project manager for each application submitted or award received.

14. **Prior SBIR Phase II Awards.** If the SBC has received more than 15 Phase II awards in the prior five fiscal years, the SBC must submit the following information in its Phase I application: name of the

awarding agency; date of award; funding agreement number; amount of award; topic or subtopic title; follow-on agreement amount; source and date of commitment; and current commercialization status for each Phase II award. This required information will not be counted toward the 15-page Project Narrative limitation.

4.0 METHOD OF SELECTION AND EVALUATION CRITERIA

4.1 Evaluation and Selection Process

Each application will be independently evaluated on its own merit and ranked on a competitive basis. Applications will be evaluated based only on information provided in the application. Applications will be initially screened to determine responsiveness, eligibility, and completeness (see Sections 4.2 and 8.1). NOAA reserves the right not to forward an application for technical review if NOAA determines the application has incomplete scientific and technical information or is missing any of the required forms and documents. Applications passing these initial screenings will be technically evaluated in accordance with the evaluation criteria (see Section 4.3). NOAA is under no obligation to fund any application or any specific number of applications in a given topic. NOAA may elect to fund several or none of the applications for the same topic. A proposal will be deemed unacceptable if it represents presently available technology.

4.2 Phase I Screening Criteria

Please carefully read the entire NOFO and review the following Phase I Screening Criteria to assure that your application meets NOAA requirements. Phase I applications that do not satisfy all the screening criteria will not be reviewed and will be eliminated from consideration for award. However, NOAA, in its sole discretion, may continue the review process for an application that is missing minor non-substantive information, the absence of which may easily be rectified.

The screening criteria are:

1. A letter of intent (LOI) is **required** and must be submitted by the SBC by the date indicated on the cover of the NOFO. Only proposals for which the applicant has submitted an LOI to NOAA by the due date are eligible to submit an application under this NOFO;
2. Each Phase I application package must be limited to one topic, which must be identified in the application. The application must clearly address research for that topic. Only proposals that are directly responsive to the research topics as described in Section 9.0 will be considered. Applicants may apply to more than one topic in this NOFO but must do so as separate applications. Applicants also may submit more than one application for the same topic but must ensure that each application is clearly differentiated;
3. Phase I application budgets must not exceed $175,000;
4. The project duration for the Phase I feasibility research shall not exceed six months;
5. The proposing firm must carry out a minimum of two-thirds of expenditures under each Phase I project;
6. All work must be performed by the SBC and its sub-awardees/subcontractors in the United States, unless a waiver has been granted **in advance** by the NOAA Grants Officer (see Section 1.5);
7. The application must be received by NOAA before the deadline specified in Section 6.1;
8. The proposing firm must qualify as eligible according to the criteria provided in Section 1.5;
9. If an application is submitted for a topic that requires a license to use a NOAA-owned invention

covered by a patent or patent application, the relevant NOAA-owned invention must be available for licensing prior to the close of this NOFO in the field of use relevant to the topic. If such NOAA-owned invention has become unavailable for licensing prior to the close of this NOFO in the field of use relevant to the topic, NOAA has the sole discretion to deem such application ineligible under the topic; and

10. The Phase I application must include all required forms and documents listed in Section 8.1.

4.3 Phase I Evaluation Criteria

Phase I applications that comply with the screening criteria in Section 4.2 will go through the following review process. The applications will be evaluated by up to three NOAA and/or external reviewers via peer review in accordance with the following criteria:

1. The scientific merit and technical approach of the proposed research (40 points);
2. The level of innovation the proposed effort offers to the research topic area (*see* Sec. 9.0) (20 points);
3. Consideration of an application's commercial and societal impacts and potential applications (20 points); and
4. Qualifications of the proposed principal/key investigators, supporting staff, and consultants and availability of instrumentation and physical facilities necessary to complete the proposed work (20 points).

Reviewers will base their evaluations only on information contained in the application. Applicants should be specific and clear when writing their applications and not assume information not clearly spelled out can be inferred by the reviewer. No technical clarifications may be made after application submission. The Program Manager will average the scores of the reviewers and rank from highest to lowest. Based upon the distribution of scores, the Program Manager will determine the score above which applications will be considered "technically superior." Applications not rated as technically superior will not be considered further. A final ranking of the technically superior applications will be forwarded to the Selecting Official for final consideration based on selection factors.

4.4 Phase I Award Selections

Final award recommendation decisions will be made by NOAA's Selecting Official based upon rankings assigned by the Program Manager and upon consideration of the following selection factors:

1. final ranking of technically superior applications;
2. diversity across the topics and project types;
3. diversity across participants;
    - geographically
    - by type of institutions
    - by type of partners
    - by researchers
4. applicants prior award performance;
5. possible duplication of other federally-funded research, and;
6. availability of funding.

In the event of a "tie" between applications, manufacturing-related projects as well as those regarding energy efficiency and renewable energy systems will receive priority in the award selection process. Subsequent to the assessment and prior to award, NOAA may ask for supplemental information and may negotiate the scope and amount of the award. The final approval of selected applications and issuance of awards will be made by the NOAA Grants Officer. The award decisions of the NOAA Grants Officer are final.

As required by the SBIR Policy Directive, NOAA will notify the applicants whether they have been recommended for a potential award within 90 calendar days of the closing date of this NOFO. If selected for potential award and approved by the Grants Officer, the applicant can anticipate receiving an award within 180 calendar days of the closing date of the NOFO. The SBC applicant shall not proceed with work until an official award notification is received, the award is accepted, and at the effective start date of the award has been reached.

4.5 Federal Awarding Agency Review of Risk Posed By Applicants

After applications are proposed for funding by the selecting official, the NOAA Grants Management Division (GMD) performs administrative reviews, including an assessment of risk posed by the non-Federal entity under 2 C.F.R. 200.206. These may include assessments of the financial stability of a non-Federal entity and the quality of the non-Federal entity's management systems, history of performance, and the non-Federal entity's ability to effectively implement statutory, regulatory, or other requirements imposed on non-Federal entities. Specific award conditions that address any risks determined to exist may be applied. Non-Federal entities may submit comments to the Federal Awardee Performance and Integrity Information System (FAPIIS) about any information included in the system about their organization for consideration by the awarding agency.

In addition, prior to making an award, NOAA GMD will review and consider the publicly available information about that applicant in the Federal Awardee Performance and Integrity Information System (FAPIIS). An applicant may, at its option, review and comment on information about itself previously entered into FAPIIS by a Federal awarding agency. As part of its review of risk posed by applicants, NOAA GMD will consider any comments made by the applicant in FAPIIS in making its determination about the applicant's integrity, business ethics, and record of performance under Federal awards.

Upon completion of the pre-award risk assessment, the NOAA Grants Officer will make a responsibility determination concerning whether the applicant is qualified to receive the subject award and, if so, whether appropriate special conditions that correspond to the degree of risk posed by the applicant should be applied to an award.

4.6 Release of Application Review Information

After final award decisions have been announced, the reviewers' technical evaluations of applications that passed the screening criteria will be provided to the applicant with written notification of award/non-award. The identity of the reviewers will not be disclosed.

5.0 CONSIDERATIONS

5.1 Awards

Contingent upon availability of funds, NOAA anticipates making a total number of approximately twenty-five (25) Phase I awards of no more than $175,000 each with up to a six (6) month period of performance. Phase II awards are anticipated to be for no more than $650,000 with up to a twenty-four (24) month period of performance. The NOAA SBIR program uses a grant mechanism for Phase I and Phase II awards.

It is anticipated that approximately half of the Phase I awardees will receive Phase II awards, depending upon the availability of funds. To provide for an in-depth review of the Phase I final report and the Phase II proposal and commercialization plan, Phase II awards will be made approximately five months after the completion of Phase I.

For planning purposes, applicants should understand that the Phase I award start date is tentatively planned for August 1, 2023. Phase II applications are tentatively due to NOAA in February 2024 and Phase II awards are tentatively planned for July 2024.

As specified in the SBIR Policy Directive, awarding agencies must provide for a reasonable fee or profit on SBIR funding agreements, consistent with normal profit margins provided to profit-making firms for R/R&D work. For this NOFO, a reasonable profit or fee not to exceed 7% of the sum of the direct and indirect costs is allowed. This profit is outlined as a separate cost under the "Other" cost category on the budget form (SF-424A) and budget narrative and is included in the budget total. The profit or fee can be drawn in increments proportional to the drawdown of funds for direct and indirect costs. Utilizing profit fee is optional; if the applicant decides to opt-out from using the 7% fee this must be stated in the budget narrative.

NOAA SBIR Phase I Grant recipients are eligible to receive Technical and Business Assistance (TABA) from a vendor provided by NOAA. The total performance period shall be no more than seven (7) months beginning on the agreement start date. A period of one (1) month is allotted after the six (6) month R&D duration for the awardee to prepare and submit a final report.

If selected to receive a Phase I grant, awardees will receive notification from NOAA and follow-up contact from NOAA's TABA provider on what services are available and how to obtain these services at no cost to the small business.

5.2 Reporting Requirements

Phase I awardees will be required to submit one Department of Commerce-required Research Performance Progress Report (RPPR, OMB Number: 0690-0032) covering the award's six-month period of performance due 30 days after the end of the project performance period of the award. This final report shall encompass completion of all the objectives or tasks from the applicant's proposal.

The RPPR form can be found here:
http://www.osec.doc.gov/oam/grants_management/policy/documents/RPPR%20Fillable%20Final%20-%20OMB%200690-0032%20Expires%2008.31.2021%20v2.pdf

Associated documentation regarding the RPPR can be found here:
http://www.osec.doc.gov/oam/grants_management/policy/documents/RPPR%20Instructions%20and%20Privacy%20Statement.pdf

To help assess the effectiveness of our program in meeting programmatic and SBIR objectives, NOAA may

periodically request information from small businesses about progress taken towards commercialization of the technology after the completion of Phase I and II awards.

5.3 Payment Schedule

The NOAA grant will include an award term with electronic payment system information. Pursuant to 2 C.F.R. § 200.305 awardees are to be paid in advance, provided they maintain or demonstrate the willingness to maintain: written procedures that minimize the time elapsing between the transfer of funds and disbursement by the recipient and financial management systems that meet the standards for fund control and accountability as established in 2 C.F.R. § 200.302. Advances of funds to a recipient organization shall be limited to the minimum amounts needed and be timed to be in accordance with the actual, immediate cash requirements of the recipient organization in carrying out the purpose of the approved program or project. The DOC policy requires that in the usual case, awardees time advance payment requests so that Federal funds are on hand for a maximum of 30 calendar days before being disbursed by the awardee for eligible award costs.

Unless otherwise provided for in the award terms, payments from DOC to recipients under this award will be made using the Department of Treasury's Automated Standard Application for Payment (ASAP) system. Under the ASAP system, payments are made through preauthorized electronic funds transfers directly to the recipient's bank account, in accordance with the requirements of the Debt Collection Improvement Act of 1996. To receive payments under ASAP, recipients are required to enroll with the Department of Treasury, Financial Management Service, Regional Financial Centers, which allows them to use the on-line and Voice Response System (VRS) method of withdrawing funds from their ASAP established accounts.

5.4 Innovations, Inventions and Patents

5.4.1 Proprietary Information

Information contained in unsuccessful applications will remain the property of the SBC applicant. To the extent permitted by Federal law, funded proposals will not be made available to the public, except for the Project Abstract information, a required document submitted as an attachment. (See Section 3.3, Section 8.1 for more information on the project abstract).

Applicants are discouraged from submitting proprietary information unless the information is deemed essential for proper evaluation of the application. If proprietary information is provided in an application, which constitutes a trade secret, proprietary commercial or financial information, confidential personal information or data affecting the national security, it will be treated in confidence, to the extent permitted by law. This information must be clearly marked by the applicant with the term "confidential proprietary information" and the following legend must appear on the title page of the proposal:

> *"This proposal contains information that shall not be disclosed outside the Federal Government and shall not be duplicated, used, or disclosed in whole or in part for any purpose other than evaluation of this proposal, unless otherwise authorized by law. If an award is made to this applicant as a result of or in connection with the submission of this proposal, the Government shall have the right to duplicate, use, or disclose the proprietary information to the extent provided in the resulting award and pursuant to applicable law. This restriction does not limit the Government's right to use information contained in the*

proposal if it is obtained from another source without restriction. The information subject to this restriction is contained on pages____ of this proposal."

Any other legend may be unacceptable to the Government and may constitute grounds for removing the application from further consideration, without assuming any liability for inadvertent disclosure. The Government will limit dissemination of such information to within official channels. Information contained in unsuccessful proposals will remain the property of the applicant. The Government may, however, retain copies of all proposals. Public release of information in any proposal submitted will be subject to existing statutory and regulatory requirements. These provisions are consistent with and do not supersede, conflict with, or otherwise alter the employee obligations, rights, or liabilities created by existing statute or Executive order relating to: (1) classified information, (2) communications to Congress, (3) the reporting to an Inspector General of a violation of any law, rule, or regulation, or mismanagement, a gross waste of funds, an abuse of authority, or a substantial and specific danger to public health or safety, or (4) any other whistleblower protection. The definitions, requirements, obligations, rights, sanctions, and liabilities created by controlling Executive orders and statutory provisions are incorporated into this agreement and are controlling.

Examples of laws that restrict the government to protect confidential/proprietary information about business operations and trade secrets possessed by any company or participant include: Freedom of Information Act (FOIA) – 5. U.S.C. § 552(b); Economic Espionage Act – 18 U.S.C. § 1832; and Trade Secrets Act – 18 U.S.C. § 1905.

In view of the above, applicants are cautioned that proposals are likely to be less competitive if significant details are omitted due to the applicant's reluctance to reveal confidential/proprietary information.

5.4.2 Rights in Data Developed Under SBIR Funding Agreements

In lieu of the Department of Commerce Financial Assistance Standard Terms and Conditions (dated November 12, 2020, available at https://www.commerce.gov/sites/default/files/2020-11/DOC%20Standard%20Terms%20and%20Conditions%20-%2012%20November%202020%20PDF_0.pdf Section C.03, Intellectual Property Rights, the following terms and conditions will apply to and be included in all SBIR awards issued under this NOFO:

(a) Definitions. As used in regards to this NOFO and awards made pursuant to this NOFO:

"**Computer database**" or "**database**" means a collection of recorded information in a form capable of, and for the purpose of, being stored in, processed, and operated on by a computer. The term does not include computer software.

"**Computer software**" (1) means: Computer Software. Computer programs, source code, source code listings, object code listings, design details, algorithms, processes, flow charts, formulae, and related material that would enable the software to be reproduced, recreated, or recompiled. (2) does not include computer databases or computer software documentation.

"**Computer software documentation**" means owner's manuals, user's manuals, installation instructions, operating instructions, and other similar items, regardless of storage medium, that explain the capabilities of the computer software or provide instructions for using the software.

“**Data**” means all recorded information, regardless of form or the media on which it may be recorded. The term includes technical data and computer software. The term does not include information incidental to contract administration, such as financial, administrative, cost or pricing or management information.

*“***Form, fit, and function data**” means data relating to items, components, or processes that are sufficient to enable physical and functional interchangeability as well as data identifying source, size, configuration, mating and attachment characteristics, functional characteristics, and performance requirements. For computer software it means data identifying source, functional characteristics, and performance requirements but specifically excludes the source code, algorithms, processes, formulas, and flow charts of the software.

“Limited rights data” means data (other than computer software) developed at private expense that embody trade secrets or are commercial or financial and confidential or privileged.

“Government Purpose”means any activity in which the United States Government is a party, including cooperative agreements with international or multi-national defense organizations or sales or transfers by the United States Government to foreign governments or international organizations. Government Purposes include competitive procurement, but do not include the rights to use, modify, reproduce, release, perform, display, or disclose Technical Data or Computer Software for commercial purposes or authorize others to do so.

“Operations, Maintenance, Installation, or Training Purposes (OMIT) Data” Data that is necessary for operation, maintenance, installation, or training purposes (but not including detailed manufacturing or process data).

“**Restricted computer software**” means computer software developed at private expense and that is a trade secret; is commercial or financial and confidential or privileged; or is copyrighted computer software; including modifications of the computer software.

“**SBIR data**” means all data first produced by an Awardee that is a SBC in performance of a small business innovation research award issued under the authority of 15 U.S.C. § 638, which data are not generally known, and which data without obligation as to its confidentiality have not been made available to others by the Awardee or are not already available to the Government.

“**SBIR rights**” means the rights in SBIR data set forth in the SBIR Rights Notice of paragraph (d) of this clause.

“**Technical data**” means recorded information (regardless of the form or method of the recording) of a scientific or technical nature (including computer databases and computer software documentation). This term does not include computer software or financial, administrative, cost or pricing, or management data or other information incidental to contract administration. (*See* 41 U.S.C. § 403(8)). The term includes recorded Data of a scientific or technical nature that is included in Computer Databases.

“**Unlimited rights**” means the right of the Government to access, use, modify, prepare derivative works,

reproduce, release, perform, display, disclose, or distribute Data in whole or in part, in any manner and for any purpose whatsoever, and to have or authorize others to do so.

(b) **Allocation of rights.**

(1) Except as provided in paragraph (c) section regarding copyright, the Government shall have unlimited rights in—

i. Data specifically identified in this award as data to be delivered without restriction;
ii. Form, fit, and function data delivered under this award;
iii. Data delivered under this award (except for restricted computer software) that constitute manuals or instructional and training material for installation, operation, or routine maintenance and repair of items, components, or processes delivered or furnished for use under this award; and
iv. All other data delivered under this award unless provided otherwise for SBIR data in accordance with paragraph (d) of this clause or for limited rights data or restricted computer software in accordance with paragraph (f) of this clause.

(2) The Awardee shall have the right to—

i. Assert copyright in data first produced in the performance of this award to the extent provided in paragraph (c)(1) of this clause;
ii. Protect SBIR rights in SBIR data delivered under this award in the manner and to the extent provided in paragraph (d) of this clause;
iii. Substantiate use of, add, or correct SBIR rights or copyright notices and to take other appropriate action, in accordance with paragraph (e) of this clause; and
iv. Withhold from delivery those data that are limited rights data or restricted computer software to the extent provided in paragraph (f) of this clause.

(c) **Copyright**

(1) Data first produced in the performance of this award.

i. Except as otherwise specifically provided in this award, the Awardee may assert copyright subsisting in any data first produced in the performance of this award.
ii. When asserting copyright, the Awardee shall affix the applicable copyright notice of 17 U.S.C. § 401 or § 402 and an acknowledgment of Government sponsorship (including award number).
iii. For data other than computer software, the Awardee grants to the Government, and others acting on its behalf, a paid-up nonexclusive, irrevocable, worldwide license to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government. For computer software, the Awardee grants to the Government, and others acting on its behalf, a paid-up, nonexclusive, irrevocable, worldwide license in such copyrighted computer software to reproduce, prepare derivative works, and perform publicly and display publicly, by or on behalf of the Government.

(2) Data not first produced in the performance of this award. The Awardee shall not, without prior written permission of the Grants Officer, incorporate in data delivered under this award any data that are not first produced in the performance of this award unless the

Awardee: (i) identifies such data; and (ii) grants to the Government, or acquires on its behalf, a license of the same scope as set forth in subparagraph (c)(1) of this clause.

(3) Removal of copyright notices. The Government will not remove any copyright notices placed on data pursuant to this paragraph (c), and will include such notices on all reproductions of the data.

***(d)* Rights to SBIR data**

(1) The Awardee is authorized to affix the following "SBIR Rights Notice" to SBIR data delivered under this award and the Government will treat the data, subject to the provisions of paragraphs (e) and (f) of this clause, in accordance with such Notice:

SBIR Rights Notice

These SBIR data are furnished with SBIR rights under Award No._____(and contract or sub-award, if appropriate). For a period of twenty (20) years, unless extended, after acceptance of all items to be delivered under this award, the Government will use these data for Government purposes only, and they shall not be disclosed outside the Government (including disclosure for procurement purposes) during such period without permission of the Awardee, except that, subject to the foregoing use and disclosure prohibitions, these data may be disclosed for use by support contractors and/or sub-recipients. After the protection period, the Government has a paid-up license to use, and to authorize others to use on its behalf, these data for Government purposes, but is relieved of all disclosure prohibitions and assumes no liability for unauthorized use of these data by third parties, except that any such data that is also protected and referenced under a subsequent SBIR award shall remain protected through the protection period of that subsequent SBIR award. This Notice shall be affixed to any reproductions of these data, in whole or in part.

(End of notice)

(2) The Government's sole obligation with respect to any SBIR data shall be as set forth in the paragraph above (d(1)). The twenty-year period of protection applies for Phases I, II and III.

***(e)* Omitted or incorrect markings**

(1) Data delivered to the Government without any notice authorized by paragraph (d) of this clause shall be deemed to have been furnished with unlimited rights. The Government assumes no liability for the disclosure, use, or reproduction of such data.

If the unmarked data has not been disclosed without restriction outside the Government, the Awardee may request, within six months (or a longer time approved by the Grants Officer in writing for good cause shown) after delivery of the data, permission to have authorized notices placed on data at the Awardees' expense, and the Grants Officer may agree to do so if the Awardee—

i. Identifies the data to which the omitted notice is to be applied;
ii. Demonstrates that the omission of the notice was inadvertent;
iii. Establishes that the use of the proposed notice is authorized; and
iv. Acknowledges that the Government has no liability with respect to the disclosure or use of any such data made prior to the addition of the notice or resulting from the omission of the notice.

(2) If the data has been marked with an incorrect notice the Grants Officer may—
   i. Permit correction, at the Awardee's expense, if the Awardee identifies the data and demonstrates that the correct notice is authorized, or
   ii. Correct any incorrect notices.

(f) Protection of limited rights data and restricted computer software. The Awardee may withhold from delivering qualifying limited rights data and restricted computer software that are not identified in paragraphs (b)(1)(i), (ii), and (iii) of this clause. As a condition to this withholding, the Awardee shall identify the data being withheld and furnish form, fit, and function data instead.

***(g) Contracting and Sub-awards*.** The Awardee shall obtain from its contractors and sub-awardees all data and rights therein necessary to fulfill the Awardee's obligations to the Government under this award. If a contractor or sub-awardee refuses to accept terms affording the Government those rights, the Awardee shall promptly notify the Grants Officer of the refusal and not proceed with the contract or sub-award without further authorization in writing from the Grants Officer.

***(h) Relationship to patents*.** Nothing contained in this subsection shall imply a license to the Government under any patent or be construed as affecting the scope of any license or other right otherwise granted to the Government.

5.4.3 NOAA-Owned Inventions

Awardees will not have any automatic rights to make, use or sell products or services incorporating NOAA-owned inventions, unless otherwise noted. For any SBIR award for a subtopic that requires a license to use a NOAA-owned invention covered by a patent or patent application, the SBIR awardee will be required to contact NOAA's Technology Partnerships Office for a patent license for research or for commercial use.

Such awardees will be granted a non-exclusive research license and will be given the opportunity to negotiate a non-exclusive or an exclusive commercialization license to the NOAA-owned invention, in accordance with the Federal patent licensing regulations, set forth in 37 C.F.R. Part 404, and to the extent that such NOAA-owned invention is available for licensing and has not otherwise been exclusively licensed to another party.

5.4.4 Patent Rights

Normally, SBCs may retain worldwide patent rights to any invention developed with Federal support. The specific requirements governing the development, reporting, and disposition of rights to inventions and patents resulting from Federal awards are described in more detail in 37 C.F.R. Part 401, which implements 35 U.S.C. 202 through 204 and includes standard patent rights clauses in 37 C.F.R. § 401.14, which will be incorporated by reference into all awards.

5.4.5 Invention Reporting

SBIR awardees must report inventions to the NOAA SBIR Program within two months of the inventor's report to the awardee. The reporting of patents and other patent obligations shall be completed in accordance with award agreement. Inventions must also be reported through the iEdison Invention Reporting System at

www.iedison.gov.

5.5 Cost Sharing

Cost sharing is permitted for applications under this program NOFO; however, cost sharing is not required and will not be considered in evaluation of applications. Cost sharing or matching funds are not to be included in the Research and Related Budget form. The amount and planned use of these funds can be described in the technical narrative.

5.6 Profit or Fee

As specified in the SBIR Policy Directive, awarding agencies must provide for a reasonable fee or profit on SBIR funding agreements, consistent with normal profit margins provided to profit-making firms for R/R&D work. For this NOFO, a reasonable profit or fee not to exceed 7% of the sum of the direct and indirect costs is allowed. This profit is outlined as a separate "Other Cost" and should be added under the "Other" cost category on the budget (SF-424A) form. The profit or fee can be drawn in increments proportional to the drawdown of funds for direct and indirect costs. Utilizing profit fee is optional, if the applicant decides to opt-out from using the 7% fee this must be stated in the budget narrative.

Example calculation of 7% fee:

1. *Direct Costs:$116,822*
2. *Indirect Costs at 40%: $46,729*
3. *Sum of Direct & Indirect Cost:$163,551*
4. *7% fee on (3): $11,449*
5. *Total Costs for the award: $174,999*

5.7 Joint Venture or Limited Partnerships

See 13 C.F.R. § 121.103(h). Joint ventures and limited partnerships are eligible, provided the entity created qualifies as a small business as defined in this NOFO. However, NOAA has elected to not permit awards to a small business concern that is majority-owned by a venture capital operating company(s), hedge funds(s), or private equity firm(s). The awardee may enter into contracts, sub-awards, or other agreements with universities or other non-profit organizations provided they still meet the requirements outlined in Section 1.5.

5.8 Research and Analytical Work

For Phase I, a minimum of two-thirds of the research and/or analytical effort, per Section 1.5, must be performed by the proposing SBC. The total cost for all consultant fees, facility leases, usage fees, and other subcontract/sub-award or purchase agreements may not exceed one-third of the total award. For Phase II, a minimum of one-half of the research and/or analytical effort, must be performed by the applicant. The total cost for all consultant fees, facility leases, usage fees, and other sub-contract/sub-award or purchase agreements may not exceed one- half of the total award.

5.9 Awardee Commitments

Upon award of a funding agreement, the awardee will be required to review and accept the terms and

conditions of the award, including making certain legal commitments through acceptance of numerous Specific Award Conditions (SAC) in the funding agreement. Awards also will be governed by the Administrative Standard Award Conditions for National Oceanic and Atmospheric Administration (NOAA) Financial Assistance Awards (February 18, 2021), Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards at 2 C.F.R. Part 200, adopted by the Commerce Department through 2 C.F.R. § 1327.101; and the Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements, 79 FR 78390 (December 30, 2014).

Section 5.10 describes the types of terms and conditions to which the awardee would commit. This list is not a complete list of terms and conditions to be included in Phase I and Phase II funding agreements and is not the specific wording of such terms and conditions.

5.10 Summary Statements

The following statements apply to Phase I and Phase II awards and are examples of some of the topic areas that will be addressed in the award terms and conditions.

1. Access to Records. Government officials have the right of timely and unrestricted access to records of awardees, including access to personnel for discussion related to the records. *See* 2 C.F.R. § 200.337, available at: www.gpo.gov/fdsys/pkg/CFR-2017-title2-vol1/pdf/CFR-2017-title2-vol1-sec200- 336.pdf.
2. Termination. Awards may be terminated (a) by the NOAA Grants Officer, if an awardee materially fails to comply with the terms and conditions of an award, or for cause; (b) by the NOAA Grants Officer with the consent of the awardee, in which case the two parties shall agree upon the termination conditions, including the effective date and, in the case of partial termination, the portion to be terminated; (c) by the awardee upon sending to the NOAA Grants Officer written notification setting forth the reasons for such termination, the effective date, and, in the case of partial termination, the portion to be terminated. *See* 2 C.F.R. §§ 200.340 available at: https://www.ecfr.gov/current/title-2/subtitle-A/chapter-II/part-200/subpart-D/subject-group-ECFR86b76dde0e1e9dc/section-200.340.
3. Non-Discrimination. The awardee will be required to comply with statutory and other non-discrimination requirements. No person in the United States shall, on the ground of race, color, national origin, handicap, age, religion, or sex, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving Federal financial assistance. *See* Department of Commerce Financial Assistance Standard Terms and Conditions, available at: https://www.commerce.gov/sites/default/files/2020-11/DOC%20Standard%20Terms%20and%20Conditions%20-%2012%20November%202020%20PDF_0.pdf Section G.02.
4. Audit Requirements. Government officials may conduct an audit of an award at any time. Unless otherwise specified in the award, for-profit organizations that expend $750,000 or more in federal funds during their fiscal year must have an audit conducted for that year in accordance with the DOC Financial Assistance Standard Terms and Conditions. *See* Department of Commerce Financial Assistance Standard Terms and Conditions, Section D.01(c).
5. Codes of Conduct. Codes of Conduct. Pursuant to the certification in Form SF- 424B, paragraph 3, the awardee must maintain written standards of conduct to establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain in the administration of the award. *See* Department of Commerce Financial Assistance Standard Terms and Conditions, Section F.

5.11 Additional Information

1. This Program Solicitation is intended for informational purposes and reflects current planning. If there is any inconsistency between the information contained herein and the terms of any resulting SBIR/STTR Funding Agreement, the terms of the Funding Agreement are controlling. Before award of an SBIR funding agreement, the Government may request the applicant to submit certain organizational, management, personnel, and financial information to assure responsibility of the applicant.
2. The Federal Government is not responsible for any monies expended by the Applicant before award of any Funding Agreement.
3. This program NOFO is not an offer by the Government and does not obligate the Government to make any specific number of awards. Also, awards under the SBIR Program are contingent upon the availability of funds.
4. The SBIR Program is not a substitute for existing unsolicited application mechanisms. Unsolicited applications will not be accepted under the SBIR Program in either Phase I or Phase II.
5. If an award is made pursuant to an application submitted under this SBIR Program NOFO, a representative of the SBC will be required to certify that the concern has not previously been, nor is currently being, paid for essentially equivalent work by any Federal agency.
6. The responsibility for the performance of the principal investigator, and other employees or consultants who carry out the proposed work, including those of sub-recipients or contractors, lies with the management of the organization receiving an award.

5.12 Technical Assistance for Application Preparation and Project Conduct

Applicants may wish to contact the National Institute of Standards and Technology (NIST) Hollings Manufacturing Extension Partnership (MEP), a nationwide network of locally managed extension centers whose sole purpose is to provide small- and medium-sized manufacturers with the help they need to succeed. The centers provide guidance to high-technology companies seeking resources and teaming relationships. To be referred to an MEP center for technical assistance, call 1-800-MEP-4-MFG (1-800-637-4634) or visit MEP's website at: http://www.nist.gov/mep.

MEP Centers are also prepared to provide referrals to state and local organizations offering resources and technical assistance to all NOAA SBIR applicants after awards have been announced.

5.13 NOAA Grant Management Office Statements

PRE-AWARD COSTS. Per 2 CFR 200.458, NOAA authorizes award recipients to expend pre-award costs up to 90 days before the period of performance start date at the applicant's own risk without approval from NOAA and in accordance with the applicant's internal policies and procedures. Such costs are allowable only to the extent that they would have been allowable if incurred after the date of the Federal award. This does not include direct proposal costs (as defined at 2 CFR 200.460). In no event will NOAA or the Department of Commerce be responsible for direct proposal preparation costs. Pre-award costs will be a portion of, not in addition to, the approved total budget of the award. Pre-award costs expended more than 90 days prior to the period of performance start date require approval from the Grants Officer. This does not change the period of performance start date.

GRANTS OFFICER SIGNATURE. Proposals submitted in response to this solicitation are not considered awards until the Grants Officer has signed the grant or cooperative agreement. Only Grants Officers can bind the Government to the expenditure of funds. The Grants Officer's digital signature constitutes an obligation of funds by the federal government and formal approval of the award.

LIMITATION OF LIABILITY. Funding for programs listed in this notice is contingent upon the availability of funds. Applicants are hereby given notice that funds may not have been appropriated yet for the programs listed in this notice. Publication of this announcement does not oblige NOAA to award any specific project or to obligate any available funds. UNIFORM ADMINISTRATIVE REQUIREMENTS, COST PRINCIPLES, AND AUDIT REQUIREMENTS.

Through 2 C.F.R. § 1327.101, the Department of Commerce adopted Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards at 2 C.F.R. Part 200, which applies to awards in this program. Refer to: http://go.usa.gov/SBYh and http://go.usa.gov/SBg4.

RESEARCH TERMS AND CONDITIONS. For awards designated on the CD-450 as Research, the Commerce Terms, and the Federal-wide Research Terms and Conditions (Research Terms) as implemented by the Department of Commerce, currently, at: https://www.nsf.gov/awards/managing/rtc.jsp, both apply to the award. The Commerce Terms and the Research Terms are generally intended to harmonize with each other; however, where the Commerce Terms and the Research Terms differ in a Research award, the Research Terms prevail, unless otherwise indicated in a specific award condition.

DEPARTMENT OF COMMERCE PRE-AWARD NOTIFICATION REQUIREMENTS FOR GRANTS AND COOPERATIVE AGREEMENTS. The Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements contained in the Federal Register notice of December 30, 2014 (79 FR 78390) are applicable to this solicitation and may be accessed online at http://www.gpo.gov/fdsys/pkg/FR-2014-12-30/pdf/2014-30297.pdf.

DEPARTMENT OF COMMERCE (DOC) TERMS AND CONDITIONS. Successful applicants who accept a NOAA award under this solicitation will be bound by the DOC Financial Assistance Standard Terms and Conditions. This document will be provided in the award package in NOAA's Grants Online system at http://www.ago.noaa.gov and at https://www.commerce.gov/oam/policy/financial-assistance-policy. BUREAU TERMS AND CONDITIONS. Successful applicants who accept an award under this solicitation will be bound by bureau-specific standard terms and conditions. These terms and conditions will be provided in the award package in NOAA's Grants Online system. For NOAA awards only, the Administrative Standard Award Conditions for National Oceanic and Atmospheric Administration (NOAA) Financial Assistance Awards U.S. Department of Commerce are applicable to this solicitation and may be accessed online at:
https://www.noaa.gov/organization/acquisition-grants/financialassistance.

HUMAN SUBJECTS RESEARCH. For research projects involving Human Subjects, an Institutional Review Board (IRB) approval or an exemption determination will be required in accordance with DOC Financial Assistance Standard Terms and Conditions "Research Involving Human Subjects" found at
https://www.commerce.gov/oam/policy/financial-assistance-policy.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA). NOAA must analyze the potential environmental impacts, as required by the National Environmental Policy Act (NEPA), for applicant projects or proposals which are seeking NOAA federal funding opportunities. Detailed information on NOAA compliance with NEPA can be found at the following NOAA NEPA website: http://www.nepa.noaa.gov/, including our NOAA Administrative Order 216-6 for

NEPA, http://www.nepa.noaa.gov/NAO216_6.pdf, and the Council on Environmental Quality implementation regulations, http://energy.gov/sites/prod/files/NEPA-40CFR1500_1508.pdf. Consequently, as part of an applicant's package, and under their description of their program activities, applicants are required to provide detailed information on the activities to be conducted, locations, sites, species and habitat to be affected, possible construction activities, and any environmental concerns that may exist (e.g., the use and disposal of hazardous or toxic chemicals, introduction of non-indigenous species, impacts to endangered and threatened species, aquaculture projects, and impacts to coral reef systems). In addition to providing specific information that will serve as the basis for any required impact analyses, applicants may also be requested to assist NOAA in drafting an environmental assessment, if NOAA determines an assessment is required. Applicants will also be required to cooperate with NOAA in identifying feasible measures to reduce or avoid any identified adverse environmental impacts of their proposal. Failure to do so shall be grounds for not selecting an application. In some cases if additional information is required after an application is selected, funds can be withheld by the Grants Officer under a specific award condition requiring the recipient to submit additional environmental compliance information sufficient to enable NOAA to make an assessment on any impacts that a project may have on the environment.

FREEDOM OF INFORMATION ACT. Department of Commerce regulations implementing the Freedom of Information Act (FOIA), 5 U.S.C. Sec. 552, are found at 15 C.F.R. Part 4, Public Information. These regulations set forth rules for the Department regarding making requested materials, information, and records publicly available under the FOIA. Applications submitted in response to this Notice of Funding Opportunity may be subject to requests for release under the Act. In the event that an application contains information or data that the applicant deems to be confidential commercial information that should be exempt from disclosure under FOIA, that information should be identified, bracketed, and marked as Privileged, Confidential, Commercial or Financial Information. In accordance with 15 CFR § 4.9, the Department of Commerce will protect from disclosure confidential business information contained in financial assistance applications and other documentation provided by applicants to the extent permitted by law.

MINORITY SERVING INSTITUTIONS. The Department of Commerce/National Oceanic and Atmospheric Administration (DOC/NOAA) is strongly committed to increasing the participation of Minority Serving Institutions (MSIs), i.e., Historically Black Colleges and Universities, Hispanic-serving institutions, Tribal colleges and universities, Alaskan Native and Native Hawaiian institutions, and institutions that work in underserved communities.

NOAA SEXUAL ASSAULT AND SEXUAL HARASSMENT PREVENTION AND RESPONSE POLICY. NOAA requires organizations receiving federal assistance to report findings of sexual harassment, or any other kind of harassment, regarding a Principal Investigator (PI), co-PI, or any other key personnel in the award. NOAA expects all financial assistance recipients to establish and maintain clear and unambiguous standards of behavior to ensure harassment free workplaces wherever NOAA grant or cooperative agreement work is conducted, including notification pathways for all personnel, including students, on the awards. This expectation includes activities at all on- and offsite facilities and during conferences and workshops. All such settings should have accessible and evident means for reporting violations and recipients should exercise due diligence with timely investigations of allegations and corrective actions. For more information, please visit: https://www.noaa.gov/organization/acquisitiongrants/noaa-workplace-harassment-training-for-contractors-and-financial.

SCIENCE INTEGRITY. (1) Maintaining Integrity. The non-Federal entity shall maintain the scientific integrity of

research performed pursuant to this grant or financial assistance award including the prevention, detection, and remediation of any allegations regarding the violation of scientific integrity or scientific and research misconduct, and the conduct of inquiries, investigations, and adjudications of allegations of violations of scientific integrity or scientific and research misconduct. All the requirements of this provision flow down to subrecipients. (2) Peer Review. The peer review of the results of scientific activities under a NOAA grant, financial assistance award or cooperative agreement shall be accomplished to ensure consistency with NOAA standards on quality, relevance, scientific integrity, reproducibility, transparency, and performance. NOAA will ensure that peer review of "influential scientific information" or "highly influential scientific assessments" is conducted in accordance with the Office of Management and Budget (OMB) Final Information Quality Bulletin for Peer Review and NOAA policies on peer review, such as the Information Quality Guidelines. (3) In performing or presenting the results of scientific activities under the NOAA grant, financial assistance award, or cooperative agreement and in responding to allegations regarding the violation of scientific integrity or scientific and research misconduct, the non-Federal entity and all subrecipients shall comply with the provisions herein and NOAA Administrative Order (NAO) 202-735D, Scientific Integrity, and its Procedural Handbook, including any amendments thereto. That Order can be found at http://nrc.noaa.gov/ScientificIntegrityCommons.aspx. (4) Primary Responsibility. The non-Federal entity shall have the primary responsibility to prevent, detect, and investigate allegations of a violation of scientific integrity or scientific and research misconduct. Unless otherwise instructed by the grants officer, the non-Federal entity shall promptly conduct an initial inquiry into any allegation of such misconduct and may rely on its internal policies and procedures, as appropriate, to do so. (5) By executing this grant, financial assistance award, or cooperative agreement the non-Federal entity provides its assurance that it has established an administrative process for performing an inquiry, investigating, and reporting allegations of a violation of scientific integrity or scientific and research misconduct; and that it will comply with its own administrative process for performing an inquiry, investigation, and reporting of such misconduct. (6) The non-Federal entity shall insert this provision in all subawards at all tiers under this grant, financial assistance award, or cooperative agreement.

REVIEW OF RISK. After applications are proposed for funding by the Selecting Official, the Grants Office will perform administrative reviews, including an assessment of risk posed by the applicant under 2 C.F.R. 200.206. These may include assessments of the financial stability of an applicant and the quality of the applicant's management systems, history of performance, and the applicant's ability to effectively implement statutory, regulatory, or other requirements imposed on non-Federal entities. Special conditions that address any risks determined to exist may be applied. Applicants may submit comments to the Federal Awardee Performance and Integrity Information System (FAPIIS) about any information included in the system about their organization for consideration by the awarding agency.

REVIEWS AND EVALUATION. The applicant acknowledges and understands that information and data contained in applications for financial assistance, as well as information and data contained in financial, performance and other reports submitted by applicants, may be used by the Department of Commerce in conducting reviews and evaluations of its financial assistance programs. For this purpose, applicant information and data may be accessed, reviewed and evaluated by Department of Commerce employees, other Federal employees, and also by Federal agents and contractors, and/or by non-Federal personnel, all of whom enter into appropriate conflict of interest and confidentiality agreements covering the use of such information. As may be provided in the terms and conditions of a specific financial assistance award, applicants are expected to support program reviews and evaluations by submitting required financial and performance information and data in an accurate and timely manner, and by cooperating with the Department of Commerce and external program evaluators. In accordance

with §200.303(e), applicants are reminded that they must take reasonable measures to safeguard protected personally identifiable information and other confidential or sensitive personal or business information created or obtained in connection with a Department of Commerce financial assistance award.

REPORTING. In accordance with 2 CFR 200.328-9 and the terms and conditions of the award, financial reports are to be submitted semiannually [this is the default] and performance (technical) reports are to be submitted [insert frequency]. Reports are submitted electronically through NOAA's Grants Online system. The Federal Funding Accountability and Transparency Act, 31 U.S.C. 6101 note, includes a requirement for awardees of applicable Federal grants to report information about first-tier subawards and executive compensation under Federal assistance awards. All awardees of applicable grants and cooperative agreements are required to report to the FFATA Subaward Reporting System (FSRS) available at https://www.fsrs.gov/ on all subawards over $30,000. Refer to 2 CFR Part 170.

6.0 SUBMISSION OF APPLICATIONS

6.1 Deadline for Applications

Letters of Intent must be received no later than 11:59 p.m. Eastern Time, by the date indicated on the cover of this NOFO via the form at FY23 NOAA SBIR Letter of Intent Submission Form which can also be found at: https://techpartnerships.noaa.gov/noaa-fy23-sbir-loi.

Phase I applications must be received no later than 11:59 p.m. Eastern Time on March 17, 2023. Only electronic applications submitted via Grants.gov will be accepted.

6.2 Letter of Intent Submission

Letters of intent must be submitted by the due date printed on the cover of the NOFO using the form found at: FY23 NOAA SBIR Letter of Intent Submission Form which can also be found at: https://techpartnerships.noaa.gov/SBIR/FY22-Letter-of-Intent.

You are encouraged to submit your LOI well before the deadline. LOIs may be submitted at any time between publication of the NOFO and the stated deadline. If more than one LOI is submitted for the same idea, the last submission will be accepted. Confirmation of submission will be received by email to the submitter's email address entered in the form.

6.3 Application Submission

Only applicants who have submitted a LOI by the deadline indicated on the cover of the NOFO will be eligible to submit a full application package. Applications must be submitted electronically through Grants.gov at www.grants.gov under announcement NOAA-OAR-TPO-2023-2007691. Paper applications or applications submitted by other electronic means will not be accepted.

1. Supplementary material, revisions, substitutions, audio or video tapes, or computer storage media or devices will **not** be accepted. While applicants may not submit replacement pages or missing documents once an application has been submitted, an applicant may submit a complete, new application including such information by the required deadline. The last application received in Grants.gov will be used for evaluation.

2. Applicants should carefully follow specific Grants.gov instructions to ensure the attachments will be accepted by the Grants.gov system. A receipt from Grants.gov indicating an application is received does not provide information about whether attachments have been received. For further information or questions regarding the electronic application process for the 2023 NOAA SBIR Phase Iannouncement, submit an email to noaa.sbir@noaa.gov, with the subject line: NOAA-OAR-TPO-2023-2007691.
3. Applicants are strongly encouraged to start early and not wait until the approaching due date before logging on and reviewing the instructions for submitting an application through Grants.gov. The Grants.gov registration process must be completed before a new registrant can apply. If all goes well, the registration process takes three (3) to five (5) business days. If problems are encountered, the registration process can take up to two (2) weeks or more.
4. Applicants must have a valid unique entity identifier number and must maintain a current registration in the Federal government's primary registrant database, the System for Award Management (https://sam.gov/SAM/), at the time of application submission. After registering, it may take several days or longer from the initial log-on before a new Grants.gov system user can submit an application. Only authorized individuals(s) will be able to submit an application, and the system may need time to process a submitted application. Applicants should save and print the proof of submission they receive from Grants.gov. If problems occur while using Grants.gov, the applicant is advised to (a) print any error message received and (b) call Grants.gov directly for immediate assistance. If calling from within the United States or from a U.S. territory, please call 1-800-518-4726. If calling from a place other than the United States or a U.S. territory, please call 1-606-545-5035. Assistance from the Grants.gov Help Desk will be available around the clock every day, with the exception of Federal holidays. Help Desk assistance will resume at 7:00 a.m. Eastern Time the day after Federal holidays. For assistance using Grants.gov, you may also email support@grants.gov.
5. To find instructions on submitting an application on Grants.gov, Applicants should refer to the "Applicants" tab in the banner just below the top of the http://www.grants.gov home page. Clicking on the "Applicants" tab produces two exceptionally useful sources of information, Applicant Actions and Applicant Resources, which applicants are advised to review.
6. Applicants should pay close attention to the guidance under "Applicant FAQs," as it contains information important to successful submission on Grants.gov, including essential details on the naming conventions for attachments to Grants.gov applications.
7. When developing your submission timeline, please keep in mind that (1) all applicants are required to have a current registration in the System for Award Management (SAM.gov) at the time of application; (2) the free annual registration process in the electronic System for Award Management (SAM.gov; see Section 6.3, #4 of this NOFO) may take between three and five business days or as long as a month or more; Please note that applications will be rejected if applicants are not registered in the System for Award Management (SAM) at the time of submission. (3) A grant cannot be issued if the designated recipient's registration in the System for Award Management (SAM.gov) is not fully up to date at the time of the award. (4) Applicants will find instructions on registering with SAM.gov as part of the Grants.gov process at: http://www.grants.gov/web/grants/applicants/organization- registration.html.
8. Applicants will receive a series of e-mail messages over a period of up to two business days before learning whether a Federal agency's electronic system has received its application. Closely following the detailed information in these subcategories will increase the likelihood of acceptance of the application by the Federal agency's electronic system.
9. The Grants.gov Online Users Guide available at the Grants.gov site (https://www.grants.gov/help/html/help/index.htm?callingApp=custom#t=GetStarted%2FGetStarted.htm) provides vital information on checking the status of applications.

Applicants should be aware that adequate time must be factored into applicants' schedules for delivery of their application. Submitters are advised that volume on Grants.gov may be extremely heavy leading up to the deadline date. Applications not received by the specified due date and time, as recorded by Grants.gov, or that do not adhere to the other requirements of this NOFO (see Section 4.2 Screening Criteria and Section 8.1 Required Forms and Documents) will not be considered. NOAA will not make allowances for any late submissions.

NOAA uses the Tracking Numbers assigned by Grants.gov and does not issue Agency Tracking Numbers.

Refer to important information in Section 6.1, Deadline for Applications, to help ensure your application is received on time.

Any amendments to this NOFO will be announced through Grants.gov. Applicants can sign up for Grants.gov NOFO amendments.

7.0 SCIENTIFIC AND TECHNICAL INFORMATION SOURCES

Background information related to the research topic areas may be found on the following sources:

- https://www.commerce.gov/about/strategic-plan
- http://www.noaa.gov
- http://techpartnerships.noaa.gov
- https://techpartnerships.noaa.gov/SBIR
- https://library.noaa.gov/
- https://uas.noaa.gov/
- https://oceanservice.noaa.gov/facts/ofs.html

8.0 SUBMISSION FORMS AND CERTIFICATIONS

8.1 Required Application Forms and Documents

After submitting a LOI (*see* sections 3.2 and 6.2), applicants should review the following list carefully to ensure the application includes all required forms and documents. **Failure to include any of the applicable listed forms and/or documents may result in rejection of the application without consideration.** Guidelines provided below are based on frequently asked questions and are not intended to be comprehensive. All documents and forms listed below must be fully completed and included in the application package as Adobe PDF files where possible.

A complete application contains three key components: a Project Narrative, a Budget Narrative, and supporting forms and documentation. The following should be included and uploaded into grants.gov as separate documents or attachments:

Project Narrative

SBIR Cover Page

The cover page is counted as pages 1 and 2 of the project narrative and is located in Appendix D.

Abstract

The abstract is counted as page 3 of the project narrative. Provide a short abstract and the anticipated results, excluding any proprietary information. See section 3.3 for more details.

Technical Content

The Technical Content starts on page 4 of the project narrative. Read Section 3.3 of this NOFO carefully, and in its entirety, for directions on completing this section of the application.

Bibliography & References Cited

Include this information, if any, in the project narrative. References cited count against the 15-page limit.

Budget Narrative

Awardee Budget Narrative

A budget narrative is required in addition to other mandatory budget information. Requested funding and allocations should be consistent throughout the entire application. Instructions for developing the required budget narrative is available at https://www.noaa.gov/sites/default/files/atoms/files/gmd_budget_narrative_guidance_-_05-24-2017_final.pdf. There is no set format for the budget narrative; however, it should provide a detailed breakdown in narrative and tabular form of costs under each applicable object class category as reflected on the SF-424A (personnel, fringe benefits, equipment, travel, supplies, other direct costs and indirect costs), and a written justification that includes the necessity and the basis for the cost. Proposed funding levels must be consistent with the project scope, and only allowable costs that fall within the spending limitations specified in Section 1.2 "Phase I – Feasibility Research" should be included in the budget. The proposed budget should reflect planned costs, but the awardee must charge actual costs to the award consistent with cost principles applicable to the type of awardee in accordance with the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards at 2 C.F.R. Part 200, which apply to awards in this program. More information is available at http://go.usa.gov/SBYh and http://go.usa.gov/SBg4.

Sub-Awardee Budget Narrative (if applicable)

Sub-Awardees should submit a budget narrative outlining costs and funding allocations similar to the awardee budget narrative.

Supporting Forms

Application for Federal Assistance (SF-424)

This form requests basic information about the applicant (name, address, telephone number, type of applicant, etc.), and other information related to the proposed project. The NOAA SBIR Program is not covered by E.O. 12372. The list of certifications and assurances (referenced in Item #21) is contained in the SF-424B. The listed Authorized Representative must sign this form.

Budget Information – Non Construction Programs (SF-424A)

The SF-424A should reflect all anticipated expenses for the project and be consistent with the budget narrative. Please provide budget values in whole dollar amounts.

In Section A, the Grant Program Function or Activity on Line 1 under Column (a) should be entered as "NOAA Small Business Innovation Research (SBIR) Program". The Federal Assistance Listing on Line 1 under Column (b) should be entered as "11.021" and the total award requested amount should be entered in the Federal (e) column.

In Section B, Acceptable fees (see Section 5.6 of this NOFO) should be included in "Other (h)". These sections of the SF-424A should reflect funds for the entirety of the award: Section A; Section B; Section C; and Section D. Section E is not relevant to this program and therefore should be left blank.

Assurances – Non-Construction Programs (SF-424B)

The SF424B should be signed by the same Authorized Representative as the SF-424 and CD-511.

Certification Regarding Lobbying (CD-511)

Enter "2023-NOAA-SBIR-01" in the Award Number Field. Enter the title of the application used in field 15 of the SF- 424, or an abbreviation of that title, in the Project Name field. The CD511 should be signed by the same Authorized Representative as the SF-424 and SF-424B.

Disclosure of Lobbying Activities (SF-LLL) (if applicable)

The SF-LLL is used to disclose any lobbying activities, if applicable.

Additional Attachments

Negotiated Indirect Cost Rate Agreement (NICRA)

NOAA will not negotiate indirect cost rates for Phase I awards. If indirect costs are included in the proposed budget, provide a copy of the approved negotiated agreement with your application if this rate was negotiated with a cognizant Federal agency in accordance with the provisions and cost principles mandated by 2 CFR Part 200 for use on grants and cooperative agreements. Negotiated Indirect Cost Rate Agreements for use on contracts in accordance with the provision and cost principles of the Federal Acquisition Regulations will not be accepted. Applicants without an established rate should provide a statement to that effect in the budget narrative and may propose estimated indirect costs that do not exceed 40 percent of the total direct costs, with no further justification. Any profit or fee requested should not be included when calculating the indirect cost base.

Applicant Fraud, Waste, And Abuse (FWA) Awareness Training Certificate

Complete the training at: https://techpartnerships.noaa.gov/wp-content/uploads/2022/02/DOC-SBIR-Mandatory-Training-Slides-and-Certification-Form.pdf. After completion, print and fill out the last page of the training presentation. Submit as an attachment to the SF-424 as described at the end of Section 8.1.

Research & Related Personal Data (R/RD Personal Data)

Complete and print the form available at https://www.grants.gov/web/grants/forms/r-r-family.html#sortby=1. Submit as an attachment to the SF-424 as described at the end of Section 8.1.

SBA Company Registry Form

SBA maintains and manages a Company Registry at http://www.sbir.gov/registration to track ownership and affiliation requirements for all companies applying to the SBIR Program. The SBIR Policy Directive requires each Phase I applicant to register in the Company Registry prior to submitting an application.

Letters of Commitment (if applicable)

Letters of commitment are **required** from all participating consultants, subawards, or subcontractors. They

should describe programmatic arrangements, confirm participation in the research, and be signed by an appropriate official of that institution. Submit as attachments to the application package.

Letters of Support (optional)
While not a requirement, applicants are strongly encouraged to submit letters of support from the private sector, which will be considered as part of the evaluation criterion on "Impact" (criteria #3).

Attachments should be combined into a **single PDF** and attached by clicking on "Add Attachments" in the SF-424 after item 15, Application for Federal Assistance. Applicants should carefully follow specific Grants.gov instructions at https://www.grants.gov/ to ensure the attachments will be accepted by the system. **A receipt from Grants.gov indicating an application is received does not provide information about whether attachments have been received.**

8.2 Verifying the Submission and Tracking the application

Applicants are urged to use the Grants.gov *Download Submitted Applications* feature to check that all required attachments were contained in their submission. Go to the *Grants.gov Online Users Guide available at the Grants.gov site (*https://www.grants.gov/help/html/help/index.htm?callingApp=custom#t=GetStarted%2FGetStarted.htm*), choose Applicants, then Applicant Actions, then select the "Check My Application Status" option, click on the* Download Submitted Applications feature, and follow the directions. The application must be both received and validated by Grants.gov. The application is "received" when Grants.gov provides the applicant a confirmation of receipt and an application tracking number. If an applicant does not see this confirmation and tracking number, the application has not been received. After the application has been received, it must still be validated. During this process, it may be "validated" or "rejected with errors." To know whether the application was rejected with errors and the reasons why, the applicant must log into Grants.gov, select "Applicants" from the top navigation, and select "Track my application" from the drop-down list. If the status is "rejected with errors," the applicant may still seek to correct the errors and resubmit your application before the deadline. If the applicant does not correct the errors, the application will not be forwarded to NOAA by Grants.gov.

Applicants can track their submission in the Grants.gov system by following the procedures at the Grants.gov site (http://go.usa.gov/cjamz). It can take up to two business days for an application to fully move through the Grants.gov system to NOAA.

8.3 Unique Entity Identifier and System for Award Management (SAM)

Excerpt 2 CFR 200 Appendix I.D.3 Each applicant (unless the applicant is an individual or Federal awarding agency that is excepted from those requirements under 2 CFR 25.110(b) or (c), or has an exception approved by the Federal awarding agency under 2 CFR 25.110(d)) is required to: (i) Be registered in SAM before submitting its application; (ii) Provide a valid unique entity identifier (UEI) in its application; and (iii) Continue to maintain an active SAM registration with current information at all times during which it has an active Federal award or an application or plan under consideration by a Federal awarding agency. NOAA may not make a Federal award to an applicant until the applicant has complied with all applicable UEI and SAM requirements and, if an applicant has not fully complied with the requirements by the time NOAA is ready to make a Federal award, NOAA may determine that the applicant is not qualified to receive a Federal award and use that determination as a basis for

making a Federal award to another applicant.

NOAA will not make a Federal award to an applicant until the applicant has complied with all applicable unique entity identifier and SAM requirements. If an applicant has not fully complied with the requirements by the time that NOAA is ready to make a Federal award pursuant to this NOFO, NOAA may determine that the applicant is not qualified to receive a Federal award and use that determination as a basis for making a Federal award to another applicant.

9.0 RESEARCH TOPICS

The NOAA SBIR program seeks proposals for highly innovative products and services that have strong commercial potential and fit within the NOAA mission areas. NOAA's Weather, Water, and Climate Strategy (FY23-27) defines six key societal challenges within NOAA's mission that must be addressed in order to improve human welfare and sustain ecosystems upon which we depend. A changing and warming climate is increasing risks to life, property, economies, and ecosystems in the United States and around the world. Climate change is altering weather patterns and ocean conditions, impacting critical water resources, altering ecosystems, and increasing the frequency and severity of extreme weather, water, and climate events. In addition, the effects of space weather pose significant and increasing societal, economic, national security, and health risks.

These interrelated challenges and risks are necessitating advances in the way weather, water, and climate information is produced and used. Integrated and actionable Earth system intelligence and decision support tools are necessary to help society mitigate and adapt to these compounding impacts. Private sector innovation is key as we navigate toward a future where people, communities, and ecosystems prosper and are resilient in the face of change.

All proposals for SBIR funding should be designed to accomplish a public purpose, so they must be related to the NOAA mission areas and research topics described, but more importantly, must be commercially viable and sustainable for the company. NOAA should not be the beneficiary of or primary customer for the technology or capability proposed. While these topics may define important scientific and technical challenges, we look to our small business applicants to define how they will bring commercially viable products or services to market.

Following are six critical challenges that highlight important NOAA mission and research priorities. You may propose within any of these research topic areas:

- 9.1 Extreme Events and Cascading Hazards
- 9.2 Coastal Resilience
- 9.3 The Changing Ocean
- 9.4 Water Availability, Quality, and Risk
- 9.5 Effects of Space Weather
- 9.6 Monitoring and Modeling for Climate Change Mitigation

Within these research topic areas, NOAA is especially interested in proposals developing technologies that integrate any of the NOAA Science & Technology Focus Areas, which include:

- Uncrewed Systems (UxS)
- Artificial Intelligence
- Data and Cloud Computing

- ‘Omics
- Citizen Science

Additionally, NOAA is highly interested in proposals that support the growth of the New Blue Economy, a knowledge-based economy looking to the sea not just for extraction of material goods, but for data and information to address climate change and inspire solutions.

Extreme Events and Cascading Hazards --- Topic 9.1

Societal Challenge

Communities across the U.S., particularly underserved communities, face enduring, compounding risks from extreme, high-impact weather, water, and climate events, which have become more severe and more frequent in recent decades.

Overview

In the context of a warming, changing climate, extreme weather, water, and climate events are becoming more common. Extreme high temperatures in the U.S. are projected to increase. The frequency and intensity of heavy precipitation events in most parts of the U.S. are projected to increase, and future droughts in most regions will likely be stronger and potentially last longer. The frequency, depth, and extent of tidal flooding are expected to continue to increase in the future, as is the more severe flooding associated with coastal storms, flooding, shoreline erosion, disruptions to commercial navigation and tourism. As the climate changes, extreme events are becoming more prevalent, and compound extreme events are leading to cascading hazards.

Innovative ideas are needed to mitigate the growing impact of extreme events and cascading hazards on key sectors of the economy, including transportation, power generation, agriculture, recreation, and natural resource management and protection.

Examples of appropriate research topic areas for applications from small businesses include, but are not limited to products and services that accomplish the following objectives:

- Help decision makers prepare for and/or adapt to extreme weather, water and climate events, including deviations in temperatures and precipitation patterns (e.g. extreme heat or cold, tornadoes, floods, coastal storms and hurricanes, marine heat waves) to inform decision making and protect life and property
- Facilitate understanding of risk for extreme weather, water and climate events for key sectors of the economy, including but not limited to transportation, power generation, agriculture, recreation, and natural resource management and protection and/or support increased resilience to likely climate impacts
- Support wildfire early detection, modeling, prediction, and monitoring of impacts, including on air quality, snowpack properties, and soil hydraulic behavior
- Support regional drought early warnings and forecasts, covering weather-to-climate timescales, as well as new methods for accurately capturing the full economic cost of drought on the agricultural sector and beyond
- Facilitate more equitable access to information about extreme weather, water and climate events
- Improve modeling and forecasting of urban heat island effects and the impact on air quality, particularly in underserved communities
- Support educators and other STEM outreach professionals to increase comprehension and use of relevant water, weather, and climate science concepts and education resources

Coastal Resilience --- Topic 9.2

Societal Challenge

U.S. coastal communities, economies, and ecosystems, as well as the natural and built infrastructure on which they depend, are increasingly impacted by accelerating changes at the coast. Creating resilience to these changes requires risk-informed decision making and adaptation via enhanced emergency response, coastal data collection, and predictive capabilities. A resilient coastal zone is necessary to reduce the risk of adverse impacts on our coastal and ocean infrastructure, ecosystems, marine transportation, tourism, recreation, and other key economic sectors at the coast.

Overview

Sea level rise, dramatic shifts in Great Lakes water levels, the warming ocean, loss of sea ice, changing ecology, reduced water quality, and coastal erosion and shoreline change are severely impacting coastal states and territories, communities, economies, and ecosystems. For instance, increasingly extreme storms and changing water levels have heightened risks to lives and property and challenged navigation and sustainable supply chains in dynamic coastal environments. Increasing impacts from coastal change represent a threat to lives and livelihoods, as well as national and economic security, and raise important social equity concerns.

There is an urgent need to develop technologies to preserve and protect coastal zones, as well as expand and enhance observations, mapping, modeling, future conditions projections, and services that inform the public about environmental and physical coastal risks.

Examples of appropriate research topic areas for applications from small businesses include, but are not limited to products and services that accomplish the following objectives:

- Facilitate better understanding and prediction of hazard risk, vulnerability, and resilience for decision makers in coastal communities with regards to sea level rise, changes in Great Lakes hydrology and water levels, and other climate impacts
- Support improved community preparedness in response to natural and human-induced coastal hazards
- Integrate real-time navigation at national ports
- Manage inundation and protect coastal infrastructure on varying timescale
- Support forecasts of temperature, salinity and other water quality risks in bays, estuaries, and sounds
- Support effective preparation and response to ocean-related threats to health, including harmful algal blooms, shellfish poisoning, and marine pollution
- Support coastal habitat conservation and restoration to increase resilience in coastal communities and ecosystems
- Address hazardous spill response and nearshore search and rescue operations

The Changing Ocean --- Topic 9.3

Societal Challenge

Ocean warming, decreasing sea ice, changing currents, rising seas, ocean acidification, and deoxygenation are affecting the nation's valuable living marine resources and many ocean-dependent businesses and communities. These changes impact the nation's security through many sectors from marine navigation, transportation, and energy, to fisheries, aquaculture, and protected resources.

Overview:

The ocean is a dynamic and connected component of the earth system. It plays a pivotal role in the global

weather and climate system by absorbing and redistributing both heat and carbon dioxide, and provides the largest source of water vapor for global precipitation. Human-caused carbon emissions have led to ocean warming, acidification, deoxygenation, and decreasing sea-ice.

To safeguard fisheries and marine-dependent communities in the face of a rapidly changing ocean, resource managers and other decision-makers urgently need better information on what is changing, who is at risk, what to plan for and how to respond.

Examples of appropriate research topic areas for applications from small businesses include, but are not limited to products and services that accomplish the following objectives:

- Support monitoring of marine health including remote sensing and in-situ monitoring technologies, for regionally-optimized ocean ecosystem and biogeochemical observations
- Support increased protection and restoration of marine and coastal habitats to enhance vital ecosystems
- Support innovative observation and exploration of the ocean, including the deep ocean, and improved data assimilation into ocean models, to improve understanding and promote more effective management of ocean resources
- Help living marine resource managers prepare for and respond to the impacts of a changing climate, ocean acidification, and other climate impacts, and develop management strategies for marine ecosystem conditions and adaptation plans to manage risk from the changing ocean and other stressors
- Facilitate sustainable and productive aquaculture practices and facilities, including new applications for uncrewed systems and environmental DNA applications to reduce illegal, unreported, and unregulated fishing
- Support access to robust forecasts, projections, risk assessments and management strategies to optimize fisheries management and increase the resilience of marine resources and the communities that depend on them
- Facilitate quantification of short- to long-term outlooks and projections of Arctic sea ice
- Support safe and efficient marine transportation, reduce maritime incidents in U.S. waters by providing timely and accurate navigational information, or facilitate preparedness and response to maritime incidents and emergencies
- Support advancements in offshore wind energy production including data-based technologies and uncrewed systems applications

Water Availability, Quality, and Risk --- Topic 9.4

Societal Challenge

The U.S. is facing emerging threats to our economic and national security and ecosystem and habitat health from competing demands for our increasingly limited and stressed water supply and other water risks nationwide, in the context of aging water infrastructure, degrading water quality, population growth, and climate change.

Overview

Water is essential for life and is inexorably linked to environmental protection, sustainable development, and international peace and security. Too much water, too little water, or poor water quality endangers life, property, communities, economies, and ecosystems. Water challenges affect all economic sectors, from agriculture to utilities, and the impacts are escalating.

There is a need for new observations and tools, as well as the use of more physically-based water modeling and fully coupled Earth system modeling approaches that leverage the rapid expansion of available data and

technology.

Examples of appropriate research topic areas for applications from small businesses include, but are not limited to products and services that accomplish the following objectives:

- Help communities better prepare for, adapt, and respond to drought and flooding
- Support understanding and management of water quality risks in rivers, lakes, estuaries and other coastal environments impacted by flooding and long term inundation
- Support integrated or improved water forecasts to support the management of water resources, water supply, and risk in the face of water stress exacerbated by climate change
- Support increased efficiencies in water usage in the transportation, hydropower, and agriculture sectors
- Facilitate the development of an integrated suite of weather- and climate-related information relevant to food security needs

Effects of Space Weather --- Topic 9.5

Societal Challenge

The effects of space weather pose significant and increasing societal, economic, national security, and health risks to the United States and nations worldwide. These include risks to the electric power grid; aviation operations; positioning, navigation, and timing (PNT) services; satellites and communications; human space exploration; and other space-based assets.

Overview

Space weather refers to variations in the space environment between the Sun and Earth, and throughout the solar system, that have the potential to adversely affect critical functions, assets, and operations in space and on Earth. Events driven by space weather can disrupt the technology that forms the backbone of this country's economic vitality and national security.

There is a need to develop the next generation of space-based observations and models to improve space weather predictive capability integrating emergent technologies, such as machine learning and artificial intelligence, to enhance space weather capabilities.

Examples of appropriate research topic areas for applications from small businesses include, but are not limited to products and services that accomplish the following objectives:

- Advance region-specific space weather products and services that provide decision-makers with improved characterization and prediction of the timing, intensity, and impact of space weather events on critical infrastructure
- Expand observational tools that supports short-term and long-term predictions of space weather including continuity of solar wind measurements and new imagery of the solar corona
- Help in the development of plans and procedures for responding to and recovering from space weather events including tools that facilitate advanced warning of geomagnetic storms

Monitoring and Modeling for Climate Change Mitigation --- Topic 9.6

Societal Challenge

Worldwide, there is now widespread recognition of the impact of greenhouse gas emissions on the climate system, leading to dangerous, accelerated warming. Within the U.S. and internationally, there is a growing demand for information about current and future greenhouse gas emissions, their impact on the state of the global climate system, and options and effectiveness of climate change mitigation measures at different scales.

Overview

The Nation and decision makers at sub-national scales require information about a number of difficult-to-quantify greenhouse gas (GHG) emission sources and sinks, the effectiveness of GHG mitigation actions over time, and the benefits and potential risks of some mitigation and removal measures, some of which have been proposed but remain untested at scale.

Given the trajectory of anthropogenic GHG emissions and Earth-system feedbacks, there is an urgent need for accurate, reliable, and timely information about GHG emissions.

Examples of appropriate research topic areas for applications from small businesses include, but are not limited to products and services that accomplish the following objectives:

- Support the development of comprehensive knowledge of greenhouse gasses and other climate forcing agents, including within emerging areas (e.g. hydrogen energy and other alternative energy choices)
- Improved climate observing and monitoring systems
- Advances in climate modeling that lead to improved scientific understanding and a new generation of climate predictions and projections on global to regional scales
- Facilitate the identification of potential climate impacts and vulnerabilities and inform the development of useful climate services
- Advance greenhouse gas observation and modeling capabilities to reliably track changes in natural and human-made emissions and sinks over time and at local, regional, continental, and global scales
- Models, tools, and products for decision makers to determine the feasibility of achieving climate mitigation targets, quantify key emission sources, identify mitigation opportunities, and evaluate the broader climate implications of various mitigation measures
- Support decision-makers by providing improved scientific information to evaluate the performance, effectiveness, benefits, and risks of certain mitigation strategies at multiple scales, including climate interventions

Appendix A. Definitions

Except as specifically noted by citation or reference, all definitions below are excerpted from the SBA SBIR Policy Directive, available at:
https://www.sbir.gov/sites/default/files/SBA_SBIR_STTR_POLICY_DIRECTIVE_OCT_2020_v2.pdf.

Applicant – The organizational entity that qualifies as a SBC at all pertinent times and that submits a contract proposal or a grant application for a funding agreement under the SBIR Program.

Application – Also referred to as a "proposal".

Authorized Organizational Representative - The individual(s), named by the applicant/recipient organization, who is legally authorized to act for the applicant/recipient and to assume the obligations imposed by the federal laws, regulations, requirements, and conditions that apply to grant applications or awards.

Awardee – The organizational entity that receives a SBIR Phase I, Phase II or Phase III award.

Commercialization - The process of developing products, processes, technologies, or services and the production and delivery (whether by the originating party or others) of the products, processes, technologies, or services for sale to or use by the Federal government or commercial markets. *As used here, commercialization includes both Government and private sector markets.*

Essentially Equivalent Work - Work that is substantially the same research, which is proposed for funding in more than one contract proposal or grant application submitted to the same Federal agency or submitted to two or more different Federal agencies for review and funding consideration; or work where a specific research objective and the research design for accomplishing the objective are the same or closely related to another proposal or award, regardless of the funding source.

Feasibility - The practical extent to which a project can be performed successfully.

Funding Agreement - Any contract, grant, or cooperative agreement entered into between any Federal agency and any SBC for the performance of experimental, developmental, or research work, including products or services, funded in whole or in part by the Federal Government.

Funding Agreement Officer. Per the SBIR Policy Directive, a funding agreement officer is defined as a federal contracting officer, a grants officer, or a cooperative agreement officer.

Grant. A financial assistance mechanism providing money, property, or both to an eligible entity to carry out an approved project or activity authorized by law of the United States (31 U.S.C. 6101(3)). A grant is used whenever the Federal agency anticipates no substantial programmatic involvement with the awardee during performance.

Innovation. Something new or improved, having marketable potential, including: (1) development of new technologies: (2) refinement of existing technologies: or (3) development of new applications for existing technologies.

Joint Venture – See 13 C.F.R. § 121.103(h).

National Environmental Policy Act (NEPA) The National Environmental Policy Act, or NEPA, is a United States environmental law that promotes the enhancement of the environment and was enacted as law on January 1, 1970 (Pub.L. 91-190). All NOAA SBIR Phase I and Phase II awards must go through an agency internal NEPA assessment before a full award is made. The purpose is to capture any details of the project that may potentially or inadvertently pollute/affect the environment. *This definition is from NOAA's NEPA implementation.*

Principal Investigator (PI) The one individual designated by the applicant to provide the scientific and technical direction to a project supported by a funding agreement.

Project Narrative – This is the main document outlining the detailed innovative solution by the applicant.

Proposal – Also referred to as an "application."

Research or Research and Development (R/R&D) - Any activity that is:

1. a systematic, intensive study directed toward greater knowledge or understanding of the subject studied;
2. a systematic study directed specifically toward applying new knowledge to meet a recognized or unmet need; or
3. a systematic application of knowledge toward the production of useful materials, devices, services, or methods, and includes design, development, and improvement of prototypes and new processes to meet specific requirements.

SBIR Policy Directive – As mandated by the SBIR legislation, the Small Business Administration (SBA) authors this policy that outlines how the SBIR program is run in each participating agency. The link to this policy can be found on sbir.gov.

SBIR Technical Data - All data generated during the performance of an SBIR award.

SBIR Technical Data Rights - The rights an SBIR awardee obtains in data generated during the performance of any SBIR Phase I, Phase II, or Phase III award that an awardee delivers to the Government during or upon completion of a Federally-funded project, and to which the Government receives a license.

Small Business Concern (SBC) – A concern that meets the requirements set forth in 13 C.F.R. § 121.702 (available at http://www.gpo.gov/fdsys/granule/CFR-2011-title13-vol1.CFR-2011-title13-vol1-sec121-702).

Socially and Economically Disadvantaged SBC (SDB) - See 13 C.F.R. Part 124, Subpart B.

Socially and Economically Disadvantaged Individual - See 13 C.F.R. §§ 124.103 and 124.104.

Sub-award – See 2 C.F.R. § 200.92.

Women-Owned Small Business (WOSB) - An SBC that is at least 51% owned by one or more women, or in the case of any publicly owned business, at least 51% of the stock is owned by women, and women control the management and daily business operations.

Appendix B. SBIR Funding Agreement Certification (at time of award)

A. SBIR Funding Agreement Certification (at time of award)

All small businesses that are selected for award of an SBIR Funding Agreement must complete this certification at the time of award and any other time set forth in the Funding Agreement that is prior to performance of work under this award. This includes checking all of the boxes and having an authorized officer of the Awardee sign and date the certification each time it is requested.

Please read carefully the following certification statements. The Federal Government relies on the information to determine whether the business is eligible for a Small Business Innovation Research (SBIR) Program award. A similar certification will be used to ensure continued compliance with specific program requirements during the life of the Funding Agreement. The definitions for the terms used in this certification are set forth in the Small Business Act, SBA regulations (13 C.F.R. Part 121), the SBIR Policy Directive and also any statutory and regulatory provisions referenced in those authorities.

If the Funding Agreement officer believes that the business may not meet certain eligibility requirements at the time of award, they are required to file a size protest with the U.S. Small Business Administration (SBA), which will determine eligibility. At that time, SBA will request further clarification and supporting documentation in order to assist in the verification of any of the information provided as part of a protest. If the Funding Agreement officer believes, after award, that the business is not meeting certain Funding Agreement requirements, the agency may request further clarification and supporting documentation in order to assist in the verification of any of the information provided.

Even if correct information has been included in other materials submitted to the Federal Government, any action taken with respect to this certification does not affect the Government's right to pursue criminal, civil or administrative remedies for incorrect or incomplete information given in the certification. Each person signing this certification may be prosecuted if they have provided false information.

The undersigned has reviewed, verified and certifies that (all boxes must be checked unless otherwise directed):

(1) ☐ The Awardee business concern meets the ownership and control requirements set forth in 13 C.F.R. § 121.702.

(2) If a corporation, all corporate documents (namely: articles of incorporation and any amendments, articles of conversion, by-laws and amendments, shareholder meeting minutes showing director elections, shareholder meeting minutes showing officer elections, organizational meeting minutes, all issued stock certificates, stock ledger, buy-sell agreements, stock transfer agreements, voting agreements, and documents relating to stock options, including the right to convert non-voting stock or debentures into voting stock) must evidence that the corporation meets the ownership and control requirements set forth in 13 C.F.R.§ 121.702. (Check one box). ☐ Yes ☐ N/A Explain why N/A:

(3) If a partnership, the partnership agreement evidences that it meets the ownership and control requirements set forth in 13 C.F.R. § 121.702. (Check one box). ☐ Yes ☐ N/A Explain why N/A:

(4) If a limited liability company, the articles of organization and any amendments, and operating agreement and amendments, evidence that it meets the ownership and control requirements set forth in 13 C.F.R. § 121.702. (Check one box). ☐ Yes ☐ N/A Explain why N/A:

(5) The birth certificates, naturalization papers, or passports show that any individuals it relies upon to meet the eligibility requirements are U.S. citizens or permanent resident aliens in the United States. (Check one box). ☐ Yes ☐ N/A Explain why N/A:

(6) ☐The Awardee business concern has no more than 500 employees, including the employees of its Affiliates.

(7) ☐SBA has not issued a size determination currently in effect finding that this business concern exceeds the 500 employee size standard.

(8) During the performance of the award, the Principal Investigator/Project Manager will spend more than one half of his/her time (based on a 40 hour workweek) as an employee of the Awardee or has requested and received a written deviation from this requirement from the Funding Agreement officer. (Check one box). ☐ Yes ☐ Deviation approved in writing by Funding Agreement officer: %

(9) All, essentially Equivalent Work, or a portion of the work proposed under this project (check the applicable line): ☐ **Has not** been submitted for funding to this Agency or another Federal agency. ☐ **Has** been submitted for funding to this Agency or another Federal agency but has not been funded under any other grant, contract, subcontract or other transaction. ☐ A portion has been funded by another grant, contract, or subcontract as described in detail in the proposal and approved in writing by the Funding Agreement officer.

(10) During performance of award, the Awardee will perform the applicable percentage of work unless a deviation from this requirement is approved in writing by the Funding Agreement officer (check the applicable line and fill in if needed):
☐ SBIR Phase I: at least two-thirds (66 2/3%) of the research.
☐ SBIR Phase II: at least half (50%) of the research.
☐ Deviation approved in writing by the Funding Agreement officer: %

(11) During performance of award, the research/research and development will be performed in the United States unless a deviation is approved in writing by the Funding Agreement officer (Check one box).
☐ Yes ☐ Waiver has been granted

(12) ☐ During performance of award, the research/research and development will be performed at the Awardee's facilities by the Awardee's employees, except as otherwise indicated in the SBIR application and approved in the Funding Agreement.

(13) The SBIR Awardee has registered itself on SBA's database as majority-owned by venture capital operating companies, hedge funds or private equity firms (check one box). ☐ Yes ☐ No ☐ N/A Explain why N/A:

(14) The SBIR Awardee is a Covered Small Business Concern (a small business concern that: (a) was not majority-owned by multiple venture capital operating companies (VCOCs), hedge funds, or private equity firms on the date on which it submitted an application in response to an SBIR NOFO; and (b) on the date of the SBIR award, which is made more than 9 months after the closing date of the NOFO, is majority-owned by multiple venture capital operating companies, hedge funds, or private equity firms). (Check one box).
☐ Yes ☐ No

15) ☐ I will notify this Federal agency immediately if all or a portion of the work authorized and funded under this award is subsequently funded by another Federal Agency.

16) ☐ I understand that the information submitted may be given to Federal, State and local agencies for determining violations of law and other purposes.

17) ☐ I am an officer of the business concern authorized to represent it and sign this certification on its behalf. By signing this certification, I am representing on my own behalf, and on behalf of the business concern that the information provided in this certification, the application, and all other information submitted in connection with this application, is true and correct as of the date of submission. I acknowledge that any intentional or negligent misrepresentation of the information contained in this certification may result in criminal, civil or administrative sanctions, including but not limited to: (1) fines, restitution and/or imprisonment under18 U.S.C. § 1001; (2) treble damages and civil penalties under the False Claims Act (31 U.S.C. § 3729 *et seq.*); (3) double damages and civil penalties under the Program Fraud Civil Remedies Act (31 U.S.C. § 3801 *et seq.*); (4) civil recovery of award funds, (5) suspension and/or debarment from all Federal procurement and nonprocurement transactions (FAR Subpart 9.4 or 2 C.F.R. Part 180); and (6) other administrative penalties including termination of SBIR/STTR awards.

_____ _____

Signature Date

_____

Print Name (First, Middle, Last)

_____

Title

_____

Business Name

Appendix C. SBIR Funding Agreement Certification (Life-Cycle Certification)

All SBIR Phase I and Phase II Awardees must complete this certification at all times set forth in the Funding Agreement (see §8(j) of the SBIR Policy Directive). This includes checking all of the boxes and having an authorized officer of the Awardee sign and date the certification each time it is requested.

Please read carefully the following certification statements. The Federal government relies on the information to ensure compliance with specific program requirements during the life of the Funding Agreement. The definitions for the terms used in this certification are set forth in the Small Business Act, the SBIR Policy Directive, and also any statutory and regulatory provisions referenced in those authorities.

If the Funding Agreement officer believes that the business is not meeting certain Funding Agreement requirements, the agency may request further clarification and supporting documentation in order to assist in the verification of any of the information provided.

Even if correct information has been included in other materials submitted to the Federal Government, any action taken with respect to this certification does not affect the Government's right to pursue criminal, civil, or administrative remedies for incorrect or incomplete information given in the certification. Each person signing this certification may be prosecuted if they have provided false information.
The undersigned has reviewed, verified and certifies that (all boxes must be checked except where otherwise directed):

(1) The Principal Investigator/Project Manager spent more than one half of his/her time (based on a 40 hour workweek) as an employee of the Awardee or the Awardee has requested and received a written deviation from this requirement from the Funding Agreement officer. (Check one box).
☐ Yes ☐ No ☐ Deviation approved in writing by Funding Agreement officer: %

(2) All Essentially Equivalent Work, or a portion of the work, performed under this project (check applicable line): ☐ Has not been submitted for funding to this Agency or another Federal Agency. ☐ Has been submitted for funding to this Agency or another Federal agency but has not been funded under any other grant, contract, subcontract or other transaction.
☐ A portion has been funded by another grant, contract, or subcontract as described in detail in the proposal and approved in writing by the Funding Agreement officer.

(3) Upon completion of the award, the Awardee will have performed the applicable percentage of work, unless a deviation from this requirement is approved in writing by the Funding Agreement officer (check the applicable line and fill in if needed):
☐ SBIR Phase I: at least two-thirds (66 2/3%) of the research.
☐ SBIR Phase II: at least half (50%) of the research.
☐ Deviation approved in writing by the Funding Agreement officer: %

(4) The work is completed and the small business Awardee has performed the applicable percentage of work, unless a deviation from this requirement is approved in writing by the Funding Agreement officer (check the applicable line and fill in if needed):

☐ SBIR Phase I: at least two-thirds (66 2/3%) of the research.
☐ SBIR Phase II: at least half (50%) of the research.
☐ Deviation approved in writing by the Funding Agreement officer: %
☐ N/A because work is not completed.

(5) The research/research and development is performed in the United States unless a deviation is approved in writing by the Funding Agreement officer. (Check one box). ☐ Yes ☐ No ☐ Waiver has been granted

(6) The research/research and development is performed the Awardee's facilities by the Awardee's employees, except as otherwise indicated in the SBIR application and approved in the Funding Agreement. (Check one box). ☐ Yes ☐ No

(7) ☐ I will notify this Federal agency immediately if all or a portion of the work authorized and funded under this award is subsequently funded by another Federal agency.

(8) ☐ I understand that the information submitted may be given to Federal, State and local agencies for determining violations of law and other purposes.

(9) ☐I am an officer of the Awardee business concern authorized to represent it and sign this certification on its behalf. By signing this certification, I am representing on my own behalf, and on behalf of the business concern, that the information provided in this certification, the application, and all other information submitted in connection with the award, is true and correct as the date of submission. I acknowledge that any intentional or negligent misrepresentation of the information contained in this certification may result in criminal, civil or administrative sanctions, including but not limited to: (1) fines, restitution and/or imprisonment under 18 U.S.C. § 1001; (2) treble damages and civil penalties under the False Claims Act (31 U.S.C. § 3729 et seq.); (3) double damages and civil penalties under the Program Fraud Civil Remedies Act (31 U.S.C. § 3801 et seq.); (4) civil recovery of award funds, (5) suspension and/or debarment from all Federal procurement and non-procurement transactions (FAR Subpart 9.4 or 2 C.F.R. Part 180); and (6) other administrative penalties including termination of SBIR/STTR awards.

_____ _____
Signature Date

_____
Print Name (First, Middle, Last)

_____
Title

_____
Business Name

Appendix D. Cover Page

NOAA SBIR Phase I Cover Page

(fillable version available at https://techpartnerships.noaa.gov/sbir/awardee-resources/applicants/)

NOFO No.: NOAA-OAR-TPO-2023-200691 Closing Date: March 17, 2023

Name of Submitting Firm:

Address of Firm (including Zip Code +4):

Title of Proposed Project:

Requested Amount: Proposed Duration: NOFO Topic No.:

NOFO Topic Title:

THE ABOVE ORGANIZATION CERTIFIES THAT:

1. It is a small business firm as defined in this NOFO.	Yes	No
2. The primary employment of the principal investigator will be with the firm at the time of award and during the conduct of the research.	Yes	No
3. A minimum of ⅔ for Phase I and 1/2 for Phase II of research will be performed by this firm.	Yes	No
4. It qualifies as a minority and disadvantaged small business as defined in this NOFO.	Yes	No
5. It qualifies as a woman-owned small business as defined in this NOFO.	Yes	No
6. Will all work on project be performed in the United States	Yes	No
7. Will all supplies, equipment and materials used, leased and/ or purchased in the U.S.	Yes	No
8. It will permit the government to disclose contact information of the corporate official of your concern, if your proposal does not result in an award, to appropriate local and State-level economic development organizations that may be interested in contacting you for further information	Yes	No
9. Will this project consist of Manufacturing-Related R&D?	Yes	No
10. Will this project produce any Energy Efficiency or Renewable energy system R&D?	Yes	No
11. It authorizes contact information and project title to be provided to the NIST Manufacturing Extension Partnership (MEP) Program after awards have been announced.	Yes	No

12 This firm and/or Principal Investigator has / has not submitted proposals for essentially equivalent work under other federal program NOFOs, or has / has not received other federal awards for essentially equivalent work.

13. The applicant and/or any of its principals are / are not presently debarred, suspended, proposed for debarment, or declared ineligible for procurement and nonprocurement transactions (FAR subpart 9.4 or 2 C.F.R. Part 180) by any Federal agency; and have / have not within a three-year period preceding this application, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a Federal, state or local government contract or subcontract or financial assistance award; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and are / are not presently indicted for, or otherwise criminally or civilly charged by a Government entity with, commission of any of these offenses.

14. It is a veteran-owned small business concern. Yes No

14a. It is a service-disabled veteran-owned small business concern. Yes No

15. It is a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office of ownership or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR Part 126 Yes No

16. Does this application include subcontracts, or other cost or no cost collaborations with Federal Laboratories or any Federal Agencies? If yes, insert the names of the Federal Laboratories/Agencies. Yes No

17. Is your small business majority owned by Venture Capital operating companies, Hedge Funds, or Private Equity Funds? Yes No

18. The company has completed the Fraud, Waste, and Abuse training available on http://techpartnerships.noaa.gov/SBIR.aspx and attached the completed certification page. Yes No

PRINCIPAL INVESTIGATOR

Name: Title: Day Telephone No.:

Signature & Date: Email: Address:

CORPORATE OFFICIAL (BUSINESS)

Name: Title: Day Telephone No.:

Signature & Date: Email: Address:

OTHER INFORMATION

Year Firm Founded Number of Employees: Avg. Previous 12 mos. Currently

Has a proposal for essentially equivalent work been submitted to another agency? Yes No
If yes, what Agency?

Is your company registered in SAM? Yes No

Taxpayer Identification Number:

Unique Entity ID (UEI):

PROPRIETARY NOTICE

This proposal contains information that shall not be disclosed outside the Federal Government and shall not be duplicated, used, or disclosed in whole or in part for any purpose other than evaluation of this proposal, unless otherwise authorized by law. If an award is made to this applicant as a result of or in connection with the submission of this proposal, the Government shall have the right to duplicate, use, or disclose the proprietary information to the extent provided in the resulting award and pursuant to applicable law. This restriction does not limit the Government's right to use information contained in the proposal if it is obtained from another source without restriction. The information subject to this restriction is contained on pages _____ of this proposal.

Appendix E. Small Business Innovation Research (SBIR) Program Phase I Application Checklist

Please review all the requirements on the checklist below carefully to ensure that your proposal meets the guidelines for submission through Grants.gov. Failure to meet these requirements may result in your application being rejected without consideration. All items listed are required unless otherwise noted.

Helpful Hints

- ★ All forms (SF-424 and required certifications) must be signed by the Authorized Organizational Representative (AOR).
- ★ For applicants who experience technical issues with Grants.gov, we encourage you to contact Grants.gov Applicant Support as soon as possible to prevent rejection due to missing the application deadline.
- ★ Don't forget to add noaa.sbir@noaa.gov to your email contacts to ensure timely receipt of follow-up communications about your application.

Are you eligible?

The following conditions must be met in order to be eligible to apply for a NOAA SBIR Grant Award:

- The applicant must qualify as a small business concern (SBC) as defined by SBA regulations.
- A letter of intent must be submitted by the deadline specified in the Notice of Funding Opportunity.
- The Principal Investigator must be employed by the company at the time of award and for the duration of the award.
- All work must be performed in the United States, and all supplies, materials, and equipment should be American-made whenever possible. For any exemptions, a waiver must be submitted and granted in advance of application by the Grants Officer.
- A minimum of two-thirds of the research and/or analytical effort must be performed by the applicant. This should be reflected in the work plan as well as the budget. At least two-thirds of the total funding requested should be allocated to the applicant small business.

Are you registered?

The following registrations must be completed before applying for a NOAA SBIR Grant Award:

- System for Award Management (SAM) - registration can take over a month and must be renewed on an annual basis.
- Small Business Association SBA - registration can take up to 90 days.
- Grants.gov - registration typically takes between 3-10 business days.

Is your application complete?

A complete application must have a Project Narrative, Budget Narrative, and selected forms, as specified below:

Project Narrative

Must be at least 10 point font and maximum 15 pages in length.

- SBIR Cover Page (*provided in the NOFO*)
- Abstract *(can not contain proprietary information)*
- Technical Content - *If a section does not apply, list the heading followed by "N/A":*
    1. Identification and Significance of the Problem or Opportunity
    2. Phase I Technical Objectives
    3. Phase I Work Plan
    4. Related Research or R&D
    5. Key Individuals and Bibliography of Related Work
    6. Relationship with Future R&D
    7. Facilities and Equipment
    8. Consultants, Contracts, and Sub-Awards
    9. Potential Commercial Application
    10. Cooperative Research and Development Agreements (CRADA)
    11. Guest Researcher
    12. Cost Sharing
    13. Similar Applications or Awards
    14. Prior SBIR Phase II Awards
- Bibliography and References Cited
- Letters of Commitment (*required from all participating consultants, subawards, and subcontractors*)
- Letters of Support *(optional but strongly recommended)*

Budget Narrative(s)

A detailed budget breakdown where the total dollar amounts match the SF424 & SF424A.

- Awardee Budget Narrative
- Sub-Awardee Budget Narrative *(if applicable)*

Forms

Unless otherwise indicated, forms can be found within the Grants.gov submission portal.

- Application for Federal Assistance (SF-424)
- Budget Information – Non Construction Programs (SF-424A)
- Assurances – Non-Construction Programs (SF-424B)
- Certification Regarding Lobbying (CD-511)
- Disclosure of Lobbying Activities (SF-LLL) *(if applicable)*
- Indirect Cost Rate Agreement (NICRA) *(if applicable, applicant provided)*
- Applicant Fraud, Waste, And Abuse (FWA) Awareness Training
- Research & Related Personal Data (R/RD Personal Data)

Appendix F. Performance Benchmark Ratings Requirements

The *Phase I to Phase II* ***Transition Rate*** requirement applies only to SBIR Phase I applicants that have received more than 20 (21 or more) Phase I awards over the past 5 fiscal years (excluding the most recent year). For these applicants, the ratio of the number of Phase II awards (awarded during the past 5 fiscal years) to the number of Phase I awards (awarded during the past 5 years excluding the most recent year) must be at least 0.25. For the purposes of this NOFO, the applicable five fiscal year period is fiscal year 2016 to fiscal year 20120. On June 1st of each year, the SBA assesses the Performance Benchmark rates for all applicable SBIR and Small Business Technology Transfer (STTR) awardees in the Company Registry. STTR is another program that expands funding opportunities in the federal innovation research and development arena. *See* https://www.sbir.gov/performance-benchmarks. Performance Benchmark rates are based on a company's total SBIR/STTR awards, across all the participating agencies.

Companies that fail to meet the Performance Benchmark requirements are not eligible to submit a Phase I proposal for a period of one year from the assessment: from June 1st through May 31st. Note that this does not affect a company's eligibility for Phase II or Phase III awards.

The ***Commercialization Rate*** requirement applies to SBIR and STTR Phase I applicants that have received more than 15 (16 or more) Phase II awards over the past 10 fiscal years, excluding the last two years. These companies must have realized, to date, an average of at least $100,000 of sales and/or investments per Phase II award (awarded during this period), or have received a number of patents resulting from the SBIR work equal to or greater than 15% of the number of Phase II awards. SBA sends three notifications each year to companies affected by the benchmark performance requirements:

April 1st – SBA runs a preliminary assessment to determine which companies appear to be failing a benchmark given the data in the system on that date. SBA sends a Warning Notice to these companies so that they can review the award in the Company Registry (SBIR.gov) and update as needed.
June 1st – SBA identifies companies that fail a benchmark and notifies them that they are not eligible to submit a Phase I proposal for a period of one year.

All applicants should verify their *Transition Rate* eligibility for Phase I awards. When logged in to the Company Registry at https://www.sbir.gov/registration, awardees can view their last assessed *Transition Rate* by clicking on the "Performance Benchmark" side-bar. These company-specific rates appear under the heading "At Last Assessment." A thumbs-up/thumbs-down indicator shows whether or not the company passed the benchmark rates at the last assessment. If at any time, a company believes the award information on SBIR.gov is not correct, it should notify SBA using the *dispute* link provided. If a company's dispute of the data used for the rates is under review, it will see "TBD" under the "At Last Assessment" heading. Companies with less than the threshold number of awards (21 Phase I awards for the Transition Rate) will see "N/A" displayed because the requirement did not apply to them.

Under the heading "Current (On-Going)", the page displays a running calculation of the benchmark rates using the next years' time periods (each period moved up by one year) and current data in the system. Companies should monitor these rates to anticipate their standing for each upcoming June 1 assessment. Prior to proposal preparation, all applicants to this NOFO that have received more than 20 Phase I awards across all federal SBIR/STTR agencies over the past five (5) years should verify that their company will not have a failing status on the *Transition Rate* Benchmark at the time of award.

General information on the Performance Benchmark requirements is available at
https://www.sbir.gov/performance-benchmarks