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2. CONTRACT NO.		3. AWARD/EFFECTIVE DATE		4. SOLICITATION NUMBER SOL-NC-16-00038		5. SOLICITATION TYPE <input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED BID (RFP)	
7. ISSUED BY RTTPOD US Environmental Protection Agency 109 T.W. Alexander Drive Mail Code: AA005 Research Triangle Park NC 27709		8. THIS ACQUISITION IS <input type="checkbox"/> UNRESTRICTED <input checked="" type="checkbox"/> SET ASIDE 100.00% FOR <input checked="" type="checkbox"/> SMALL BUSINESS  SIC: 541712 SIZE STANDARD: 1,000		6. SOLICITATION ISSUE DATE 08/30/2016			
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15. PROMPT PAY DISCOUNT				16. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION <input type="checkbox"/> 10 U.S.C. 2304 (C) (       ) <input type="checkbox"/> 41 U.S.C. 253 (C) (       )			

17. ITEM NO.	18. SCHEDULE OF SUPPLIES/SERVICES	19. QUANTITY	20. UNIT	21. UNIT PRICE	22. AMOUNT
	SBIR PHASE I SOLICITATION				

23. ACCOUNTING AND APPROPRIATION DATA		24. TOTAL AWARD AMOUNT (FOR GOVT USE ONLY)	
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NAME AND TITLE OF SIGNER (TYPE OR PRINT)	DATE SIGNED	NAME OF CONTRACTING OFFICER (TYPE OR PRINT)	DATE SIGNED
		Jeffery Clodfelter	

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SOLICITATION NO. SOL-NC-16-00038

DATE AND LOCAL TIME \_\_\_\_\_

**ENVIRONMENTAL PROTECTION  
AGENCY**

**SMALL BUSINESS INNOVATION RESEARCH (SBIR)  
PROGRAM PHASE I SOLICITATION**

**SOL-NC-16-00038**

**ISSUE DATE: August 30, 2016**

**CLOSING DATE: October 20, 2016**

\*CAUTION - See Section VI., Paragraph J. j(c)(3), Instructions to Offerors, Concerning Late Proposals and Modifications. And Section VI., Paragraph J. j(d), offeror expiration date. Proposals submitted in response to this solicitation will be valid for 300 days.

Your proposal (including all appendices) **shall be submitted in Portable Document Format (PDF)**, and **shall be received via FedConnect by 12:00 p.m. (noon) Eastern Standard Time (EST) on October 20, 2016**. Your **entire proposal (including appendices)** shall be submitted through FedConnect as **ONE document in PDF**. Only proposals received via FedConnect as ONE PDF by the deadline identified above will be considered for award.

**Please read this entire solicitation carefully prior to submitting your proposal.**

**Proposals shall be submitted via the FedConnect web portal ([www.fedconnect.net](http://www.fedconnect.net)). In order to submit proposals, offerors must register in FedConnect at [www.fedconnect.net](http://www.fedconnect.net), see main page of FedConnect website for registration instructions. For assistance in registering or for other FedConnect technical questions please call the FedConnect Help Desk at (800) 899-6665 or email at [support@fedconnect.net](mailto:support@fedconnect.net).**

**IMPORTANT:**

**Please note Section VI., Paragraph J. j, Federal Acquisition Regulation Clause 52.215-1(c)(3), “Instructions to Offerors – Competitive Acquisitions” concerning Late Proposals, Modification of Proposals and Withdrawal of Proposals.**

**It is the responsibility of Offerors to submit proposals in FedConnect with sufficient time to ensure they are received by the date and time specified. Only proposals received by the date and time specified via FedConnect will be considered for award.**

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# PHASE I SOLICITATION FOR SMALL BUSINESS INNOVATION RESEARCH

## I. SBIR PROGRAM DESCRIPTION

### A. Purpose of EPA's SBIR Program

Every Federal agency with an extramural research and development (R&D) budget over \$100 million is required by law to have a Small Business Innovation Research (SBIR) program. For the Environmental Protection Agency (EPA), the SBIR program provides one way it can directly award R&D funding to small businesses. The EPA SBIR program is very competitive. Each agency implements the program in a phased manner that follows the technology development continuum: research, development, demonstration, commercialization, and utilization. The number of phases an agency supports depends on its program needs and budget. Generally, there are two phases: the first is for proof of concept, and the second is intended to move the technology as far as possible toward full-scale commercialization. The objective of Phase III, where appropriate, is for the small business to pursue commercialization objectives resulting from the Phase I/II R/R&D activities. The SBIR program does not fund Phase III.

#### 1. Importance of Commercialization

For the EPA, success of its SBIR program means that the technologies it supports will in fact be used to solve the problems for which they are being developed; therefore, from the outset of the selection process, the EPA will consider commercialization potential to be as important as technical potential, and it will evaluate proposals accordingly.

Successful commercialization usually results from reversing the technology development continuum. That is, first identifying a need that can be addressed by technology, then assessing whether that need provides a viable market opportunity, and, after that, identifying or inventing a technology that can be developed and commercialized to meet that need in a profitable manner. An offeror is encouraged to conduct market research before submitting their proposal to this solicitation to demonstrate that there is a viable market opportunity.

EPA also requires the offeror to provide commercialization history information if they have received one or more SBIR Phase II awards from any agency. A [template](#) is provided for the history in Appendix 6. This information is incorporated into the solicitation as part of the evaluation criteria in section V.B. Phase I Commercialization Criteria, (2) Management Capabilities and Principal Investigator (PI) Experience and Commitment.

#### 2. Desire for Disruptive and Platform Technologies

The EPA's needs result from its mission to protect human health and the environment. Because its needs are large and the available funding is small, the EPA seeks "disruptive" technologies that offer totally new approaches to meeting its needs—not incremental improvements of existing technologies. Such novel technologies could, for example, completely eliminate a seemingly intractable problem or provide performance at dramatically reduced costs and orders of magnitude better than existing technology. In addition, the EPA seeks "platform" technologies that have the potential for many future applications in addition to the proposed application.

#### 3. Risk Taking is Essential

The EPA recognizes that supporting such ground-breaking technologies involves a high risk that projects will not meet their objectives. For the EPA, the potentially greater rewards of such technologies justify that larger degree of risk. The EPA welcomes and accepts such risks in the interest of fulfilling its mission.



#### **4. Life Cycle Impacts must be Addressed**

Proposals should also address the lifecycle environmental impacts of the technology, including (if applicable) minimizing resource use, minimizing toxicity of materials, efficient use of water and energy, minimizing pollution, and minimizing the impacts of disposal. A formal Life Cycle Analysis (LCA) is not required.

#### **5. Demonstration is Encouraged**

Demonstration is an important part of commercializing environmental technologies. This is because the effectiveness of the technologies in protecting human health and the environment is a critical consideration in the decision to adopt them. End users (e.g. companies and municipalities) are often reluctant to install innovative technologies that have not been demonstrated for extended periods of time. There may also be Federal, state and local regulations that only permit the use of technologies with demonstrated performance.

#### **6. Competing Technologies**

It is necessary to know what technologies are currently being used, their performance characteristics and costs. Proposals must compare the performance and cost of their innovative technology with that of currently used technologies. Generally, a significant improvement in performance and/or reduction in costs will be necessary for there to be any possibility of successful commercialization.

#### **7. Two-Step Evaluation Process**

The EPA will follow a two-stage application evaluation process to make funding decisions. The two stages are: external peer review and internal programmatic review. The review processes and the evaluation criteria that will be used in each stage are described later in the solicitation.

### **B. Phase I**

The EPA anticipates making approximately eighteen (18) Phase I awards, each in the amount up to \$100,000 and not to exceed a six (6) month term of performance. It is anticipated that these contracts will be awarded with a contract start date of June 1, 2017. The Phase I effort is for “proof of concept” of the proposed technology. All companies that successfully complete Phase I are eligible to compete for Phase II which is to further develop and commercialize the technology.

### **C. Performance Benchmark Requirements for Phase I Eligibility**

Each year, the Small Business Administration (SBA) assesses the Performance Benchmark rates for all applicable SBIR or Small Business Technology Transfer (STTR) awardees in the Company Registry. Rates are based on a company’s total SBIR/STTR awards, across all the participating agencies. Companies that fail to meet either of the two Performance Benchmark requirements are not eligible to receive a Phase I award for a period of one year from the assessment. Note that this does not affect a company’s eligibility for Phase II or Phase III awards.

All offerors for an SBIR or STTR award must be registered on [www.SBIR.gov](http://www.SBIR.gov). Offerors should be sure to update their information on the Company Registry at least once per year. To open or update an SBIR/STTR Company Registry account, go to [www.sbir.gov/user](http://www.sbir.gov/user) and register as a Small Business User. After the registration is complete, the SBA will issue your company a unique Small Business Concern (SBC) Control ID and .pdf file to be attached to this application.

**NOTE: THE SBA NOTIFIES FIRMS EACH YEAR THAT DO NOT MEET THE ELIGIBILITY REQUIREMENTS DESCRIBED BELOW WILL NOT BE ELIGIBLE TO RECEIVE A PHASE I AWARD FOR ONE YEAR AFTER THE SBA NOTIFICATION.**

Before responding to this solicitation, all offerors should verify their Transition Rate and Commercialization Rate eligibility for Phase I awards. Each year, the SBA will perform an evaluation of companies and the SBA will notify the companies of their status. Phase I offerors that meet the below criteria must meet two Performance Benchmark requirements to be eligible for a new Phase I award: the Phase I to Phase II Transition Rate and the Commercialization Rate benchmarks. General information on the Performance Benchmark requirements is available on [www.SBIR.gov](http://www.SBIR.gov) on the “Performance Benchmarks” tab under the “Learn About” section.

The Phase I to Phase II Transition Rate requirement applies only to SBIR Phase I offerors that have received more than 20 Phase I awards over the past 5 fiscal years (excluding the most recent year). For these offerors, 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.

The Commercialization Rate requirement applies only to SBIR Phase I offerors that have received more than 15 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 and will also communicate these to the EPA SBIR program. The SBA will also notify the EPA SBIR Program of those companies that have met the benchmarks as detailed above.

When logged in to the Company Registry at [www.sbir.gov](http://www.sbir.gov), awardees can view their last assessed Transition Rate and Commercialization 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 and 16 Phase II awards for the Commercialization 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 offerors to this solicitation 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. Offerors that have received more than 15 Phase II awards across all federal SBIR/STTR agencies over the past ten (10) years should verify that their company will not have a failing status on the Commercialization Rate benchmark at the time of award.

#### **D. 2016 SBIR Phase I Research Topics**

Given EPA’s broad mission of protecting human health and the environment, it faces a broad range of problems that need solution and for which innovative technologies could help provide solutions. Each year EPA’s SBIR program selects from this broad range of problems a number of specific topics to include in its Phase I solicitation. The highest priority needs are identified and then the topics are written to address those needs. Many of the topics address more than one need – e.g., water and homeland security, and indoor air quality and reducing toxicity of

materials. Agency strategy documents, multi-year plans, peer-reviewed research needs assessment and other materials are used in identifying the highest needs and in crafting the topics.

For this solicitation, the EPA's needs are being expressed through a variety of very specific topics. Offerors must directly address and select just one of the specific topics described below.

The topics for this solicitation are:

## 1. Air and Climate

### Formaldehyde Sensor

Formaldehyde is a colorless, flammable gas at room temperature that has a strong odor. Indoor exposure can result from formaldehyde emissions from composite wood products, building materials, insulation, glues, paints and coatings, permanent press fabrics, cosmetics, dishwashing liquids, gas stoves, kerosene heaters, and cigarette smoke (<https://www.epa.gov/formaldehyde/facts-about-formaldehyde>).

Exposure to formaldehyde can cause adverse health effects, including (at 0.1-0.5 ppm) nasal and eye irritation, neurological effects, and increased risk of asthma and/or allergy, and (at 0.6-1.9 ppm) eczema and changes in lung function (<http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=219&tid=39>). Formaldehyde is a known human carcinogen (<http://www.cancer.gov/about-cancer/causes-prevention/risk/substances/formaldehyde/formaldehyde-fact-sheet>).

Exposure to formaldehyde can be reduced by opening windows, using fans to bring in outside air, and removing and/or avoiding products that are sources of formaldehyde emissions. Having a low-cost formaldehyde sensor would enable people to know when mitigation measures are warranted and how effective they are. As a result, EPA is seeking the development and commercialization of such sensors.

**Topic Code 1A: Inexpensive Indoor Formaldehyde Sensor.** Develop a simple sensor that can be used in homes and other indoor settings to detect formaldehyde at concentrations in air of 0.05-5.0+ ppm plus or minus 0.01 ppm. The sensor should be hand-held, have internal (downloadable) electronic data storage (be capable of storing at least 2,000 one minute data points), have data calibration capabilities, be able to operate for a minimum of 8 hours, and cost no more than \$100.

### Methane Sensor

Methane emissions from human activity are the second largest source of greenhouse gases emitted in the US. Pound for pound the impact of methane on climate change is more than 25 times greater than that of carbon dioxide. The largest sources of methane emissions are natural gas and petroleum systems, domestic livestock, and landfills for waste from homes and businesses

(<https://www3.epa.gov/climatechange/ghgemissions/gases/ch4.html>). There is significant potential to reduce these emissions

([https://www3.epa.gov/climatechange/Downloads/EPAactivities/Non\\_CO2\\_US\\_Summary\\_Report\\_SinglePg.pdf](https://www3.epa.gov/climatechange/Downloads/EPAactivities/Non_CO2_US_Summary_Report_SinglePg.pdf))

. The US government has supported a number of such efforts—e.g., through the Global Methane Initiative (<https://www.epa.gov/gmi>). In May 2016, EPA issued a new source performance standard to reduce methane emissions from new, reconstructed, and modified sources in the oil and gas industry

(<https://www3.epa.gov/airquality/oilandgas/actions.html>).

Identifying fugitive emissions from these sources can be an important step toward leak reduction and other mitigation measures. A methane sensor that could readily and affordably make such measurements in the field would have great utility. As a result, EPA is seeking the development and commercialization of sensors that can detect methane emissions from landfills, oil and gas operations and facilities, livestock operations, and natural gas distribution systems.

**Topic Code 1B: Low-Cost Sensor for Identifying Fugitive Methane Emissions.** Develop a sensor that can detect methane at concentrations in air of 2-250 ppm plus or minus 2 ppm. It should be hand-held and provide continuous readouts (it should not require collection of a sample that would be sent to a laboratory for analysis), provide electronic transmittal of the data, have data storage and calibration capabilities, and cost no more than \$100 and preferably less than \$50.

## 2. Manufacturing

### Greener Plastics

Executive Order 13329 directs the EPA to properly and effectively assist the private sector in its manufacturing innovation in order to sustain a strong manufacturing sector in the U.S. economy. These innovations often involve engineering and technical solutions that make the manufacturing operation and/or the manufactured product both more environmentally and economically sound.

The EPA is seeking the development and commercialization of innovative technologies that, when compared with currently available technologies, have dramatically better performance, decreased cost of production, and reduced environmental impacts in both production and use.

The production, use, recycle/reuse, and disposal of plastic materials and products pose significant environmental and human health problems. The EPA is seeking innovative greener manufacturing of plastics and greener plastic materials and products.

**Topic Code 2A: Greener Manufacturing of Plastics.** Develop for a specific plastic or family of plastics that has significant negative public health and environmental impacts an improved manufacturing process that (a) eliminates the use of one or more toxic chemicals in the process, (b) greatly reduces the amount of energy used to carry out the process, and/or (c) eliminates one or more toxic pollutants that currently result from the process. Comparison with the currently used manufacturing process and assessing the overall life cycle of the plastic(s) are integral to this topic.

**Topic Code 2B: Greener Plastic Materials and Products.** Develop for a specific plastic or family of plastics that has significant negative public health and environmental impacts alternative materials and products that (a) do not emit toxic fumes, (b) are not toxic if ingested, (c) rapidly biodegrade in soil and water, and/or (d) are easily recycled and reused. Comparison with the performance and cost of the currently-used plastic materials and products and assessing their overall life cycle are integral to this topic.

## 3. Toxic Chemicals

### Cleaner Manufacturing of Dyes, Paints and Inks

Polychlorinated biphenyls (PCBs) have extreme environmental persistence, the ability to bioaccumulate, and adverse human health effects (<https://www.epa.gov/pcbs>). They were used as insulation fluids in electrical

transformers and generators, as fluorescent lamp ballast, and in caulk. In 1979 the US banned their production under the Toxic Substances Control Act (TSCA).

PCBs continue to be generated and released into the environment as the unintended by-products of the manufacturing of certain dyes, paints, and inks (<http://ehp.niehs.nih.gov/121-a86/>).

Studies have detected these PCBs in waterways across the U.S. and attribute their presence to this manufacturing by-product. This pollution source is causing water impairment and resulting in challenges to states and other entities in meeting water quality standards.

The EPA would like to see the development and use of dye, paint, and ink manufacturing processes that do not produce PCBs, as follows.

**Topic Code 3A: Cleaner Manufacturing Processes for Dyes, Paints, and Inks.** Develop cleaner manufacturing processes for dyes, paints, and inks that do not create unintentional undesirable by-products including PCBs. These proposed processes should also consider other lifecycle impacts of their manufacturing process including toxicity of feedstocks, energy consumption/carbon emissions, and end of life, etc.

#### Understanding the Chemical Composition of Consumer Products

Understanding human exposure to chemicals is central to EPA's mission of protecting human health and the environment, but the lack of information on chemical safety remains an issue (<https://www.epa.gov/chemical-research>). In particular, there is a lack of information on exposure to toxic chemicals used in consumer products. This information gap could potentially be addressed through a citizen science approach by helping consumers understand and be aware of the toxic chemicals in the products they consider purchasing and to consider that information in their buying decisions. In order to increase awareness of human exposure to chemicals in consumer products, EPA is looking for:

**Topic Code 3B: Novel Technologies to Help Consumers Understand the Chemical Composition of Consumer Products.** Development of technologies that could scan product Universal Product Codes (UPC) codes to inform users of what chemicals are in the products that are of interest to health reasons (e.g., allergens such as nuts or chemicals of concern such as food dyes or Bisphenol A (BPA)). The technology could also indicate whether the products fall into certain categories (e.g., "organic" or "safer choice" <https://www.epa.gov/saferchoice>). The technology could calculate daily exposure based on typical product usage and other information of value to the consumer. The technology should be geared toward priority chemicals of interest to the EPA, which include endocrine disrupting compounds and phthalates. It should also address commercial sectors of interest to EPA, including consumer care products, cleaning products, and food and beverages.

## 4. Water

### Water Treatment and Infrastructure

The Office of Water (OW) has the goal of being a catalyst for fostering the protection and sustainability of water resources in the U.S. and around the globe. It has produced two papers that are intended to help achieve this goal. The first is the March 27, 2013, "[Blueprint for Integrating Technology Innovation into the National Water](#)

[Program.](#)” The second is the April 2014 “[Promoting Technology Innovation for Clean and Safe Water: Water Technology Innovation Blueprint—Version 2](#)” (EPA 820-R-14-006). These papers identify 10 market opportunities for technology innovation. The following topics in the general areas of drinking water treatment, water infrastructure and point of use water monitoring, address these opportunities.

**Topic Code 4A: Non-Reverse Osmosis Based Desalination Units for Small Communities:** Develop non-reverse osmosis based desalination units that can provide sufficient potable water to meet the needs of small communities (those under 10,000 population). The units should be scalable for producing from 100,000 to 1,000,000 gallons per day of potable water. The units should be able to desalinate seawater and brackish water. They should be able to treat water that also contains other chemicals, biological materials, and organic and non-organic materials. They should be able to operate on a continuous basis. They should be small, sturdy, highly resistant to corrosion and other degradation processes, easy to operate and maintain, long-lasting, use little energy, and be affordable in terms of capital and operating costs.

**Topic Code 4B: Non-Toxic Coatings for Water Pipes that Prevent the Growth of Biofilms, Corrosion, Scaling, and Leaching of Lead:** Develop non-toxic coatings (not inserts or sleeves) for the inside of water pipes that prevent the growth of biofilms, prevent corrosion and scaling, and prevent the leaching of lead from the pipes. The coatings should be easy to apply as retro-fits. They should be applicable to any size pipe. They should be resistant to scrapes and tears, long-lasting, and affordable.

#### Lead Test for Tap Water

There are many possible sources of lead in homes—e.g., lead paint, dust, pharmaceuticals, toys, dishes, and glasses. In addition, drinking water can contain lead from lead pipes and natural sources. Lead can cause serious health effects with young children being the most susceptible (<https://www.epa.gov/lead>).

While there is no safe level of lead in drinking water, EPA has set an “action level” of 0.015 milligrams per liter (mg/l), which is equal to 15 parts per billion (ppb) (<https://www.epa.gov/your-drinking-water/table-regulated-drinking-water-contaminants>). If someone finds that they have greater than this concentration of lead in their tap water, they can flush their line before use, only use cold water for eating and cooking, use a water filter, or use bottled water. They should also contact their water provider or local health department. If a water utility finds that more than 10% of sampled households exceed this level, it must take action to reduce the lead concentration throughout the system.

There are test kits on the market for measuring lead in tap water, but often they are expensive, require sending a water sample to a laboratory for analysis, and/or are not accurate. There is a need for a simple, inexpensive means for people to determine the level of lead in their tap water. It could, for example, be a strip of paper or plastic that turns from green to red when the concentration at the tap exceeds the action level.

**Topic Code 4C: Simple Lead Test for Tap Water in Homes.** Develop an extremely simple test strip that will indicate whether the lead concentration in tap water exceeds the EPA action level. The strip should give a visual determination within 30 seconds, cost less than \$2 per strip, be stable for at least 5 years when stored, and be accurate to within plus or minus 0.5 ppb of the action level of 15 ppb.

## 5. Water and Homeland Security

EPA has been designated as the lead homeland security agency for water and is responsible for protecting water systems. A specific area of interest is innovative technologies that can prevent the trapping by and adhesion of contaminants to the inside of pipe walls or other such surfaces in the event that a drinking water system becomes contaminated. To achieve this goal EPA is interested in supporting the development and commercialization of the following innovative technology.

**Topic Code 5A: Water Pipes that Prevent the Growth of Biofilms, Prevent Corrosion and Scaling, and Do Not Contain Lead:** Develop water pipes that due to their composition alone (i.e., without the use of coatings or other surface treatment) prevent the growth of biofilms, prevent corrosion and scaling, and do not contain lead. The pipes should be lighter, stronger, more resistant to breaking, longer lasting, easier to install and maintain, and cost no more than currently used water pipes.

## 6. Greener Buildings

### Interior Construction Materials

Floors, walls, and ceilings of homes are often made with materials that emit formaldehyde and other organic pollutants that are toxic to the people who live there. Developing non-toxic materials that can perform equally well in these interior construction applications will reduce the exposure to toxic off-gases by the residents. With this in mind, EPA is interested in supporting the development and commercialization of innovative technologies that address the following topic.

**Topic Code 6A: Non-Toxic Interior Construction Materials for Homes:** Develop non-toxic alternatives for materials commonly used in the composition of floors, walls, and/or ceilings in homes. The technology must be affordable and at least as rugged and long-lasting as currently used materials.

### Exterior Construction Materials

The exterior of buildings could be constructed with greener materials. They could include, for example, solar skins that produce energy for the building, cladding made with materials that are non-toxic, structural elements that weigh less and have less volume, materials that are easily re-cycled and re-used and do not leave parts that have to be sent to landfills or otherwise disposed, etc. As a result, there is a need for the development and commercialization of the following:

**Topic Code 6B: Greener Exterior Construction Materials:** Develop construction materials for the exterior of buildings that are greener throughout their life cycle than currently used exterior construction materials. For example, the materials they are made of should be non-toxic, result from less polluting manufacturing processes than currently used, be easier to re-cycle and re-use than currently used materials. They should be stronger; more durable; last longer; weigh less; have lower volume; and cost less to produce, use in construction, re-cycle and re-use, and dispose than currently used materials. Comparison with currently-used materials and a life cycle perspective are integral to this topic.



## E. Phase II

(THIS SOLICITATION IS FOR PHASE I PROPOSALS ONLY)

### Process

Upon completion of their Phase I project, Phase I awardees are eligible to submit for follow-on Phase II funding. Phase II offerors should have made significant progress in their commercialization planning and implementation during their Phase I project.

Phase II is the principal R&D effort. It should be completed in 24 months. It has two objectives. The first is to continue the R&D initiated under Phase I, and take it at least through full-scale testing of the technology. The second is to work with partners, investors, and customers to fully commercialize the technology and obtain widespread utilization.

The EPA recognizes that a full demonstration of a technology's capability and full-scale commercialization may require, in effect, a Phase III that utilizes non-EPA Federal and/or private sector funds. Phase II projects should position their technologies to successfully move into and through such a Phase III.

The EPA anticipates making approximately eight (8) Phase II awards, each in the amount of \$300,000 with a 24-month term of performance. In Phase II, the EPA is also offering a commercialization option of \$100,000 to companies that can secure third-party investment of \$100,000 or more for the commercialization of their technology. To implement this, the Agency requires a "Commercialization Option" under which Phase II offerors shall submit a proposal for up to \$100,000 of additional EPA funding.

The small business concern shall document the receipt of these latter funds from one or more third-party investors, such as a venture capital firm, an individual "angel" investor<sup>1</sup>, a state or local funding source, another company under a partnership, licensing, or joint venture arrangement, or any combination of third parties. The EPA funds must be designated solely for support of the R&D-related elements of the project. The entire Phase II proposal, including the commercialization option, will be evaluated together.

The EPA anticipates issuing the follow-on Phase II Solicitation on or about December 14, 2017, with proposals due on/about February 1, 2018.

### Evaluation

For Phase II, the EPA will use a two-stage evaluation process similar to that used for Phase I. There will be an external peer review, plus an internal review that considers programmatic balance, Agency priorities, and available funding. The following criteria will be used in the external peer review of the Phase II proposals.

#### Phase II Commercialization Criteria

- (1) **Commercialization Plan:** Completeness of market analysis. Goals that involve achieving by the end of Phase II full-scale commercialization and adoption. Thoroughness and convincing nature of the steps in the plan to reach those goals. Clearly delineated plans for field and full-scale demonstrations in the facilities of potential and already-committed partners using widely accepted evaluation criteria and processes.
- (2) **Company/Team:** Management Team demonstrated effective performance and good working relations in Phase I. Principal Investigator (PI), supporting staff, and consultants demonstrated commitment to the

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<sup>1</sup> An angel investor is an investor who provides financial backing for a business start-up.



project and have convincing plans to continue and enhance that commitment in Phase II. In Phase I, company effectively used external advisors such as leaders in technical, entrepreneurial, financial, and other relevant areas and has convincing plans to continue and strengthen these relationships in Phase II.

- (3) **Partners/Investors:** Demonstrated ability of company in Phase I in building relationships with commercial, distribution, investors, and/or other relevant partners. Convincing plans for moving in Phase II to more formalized relationships with these and other partners that will result in successful commercialization of the technology. Success in obtaining investment funds during Phase I and commitments of additional investment in Phase II and beyond.

#### **Phase II Technical Criteria**

- (1) **Technical Soundness:** Convincingly established proof of concept in Phase I. Clearly explained and convincingly demonstrated in Phase I the soundness of the scientific and technical principles underlying the technology that will apply in Phase II. Technology is ready to move from field/operational-setting demonstrations to initial production and then to full-scale commercialization and adoption to meet the goals of the Commercialization Plan.
- (2) **Demonstrations and Performance Evaluation Criteria:** Demonstrations carried out in Phase I in operational facilities of committed or potential manufacturing partners. Use of widely-accepted and environmentally-relevant performance evaluation criteria when conducting demonstrations. Relevance of the planned demonstrations to achieving the goals of the Commercialization Plan.
- (3) **Life Cycle Impacts and Quality Assurance Plan:** Completeness of the life cycle analyses performed in Phase I. Convincing plans for life cycle analyses in Phase II. Success in Phase I and convincing plans for Phase II to address potential negative environmental impacts of the technology. Adequacy of Quality Assurance Plan for Phase II and convincing plans for following that plan in Phase II.

#### **Phase II Internal Programmatic Relevancy Review Criteria**

- (1) The potential of the technology to meet Agency program priorities.
- (2) The potential of the technology to advance sustainability, including environmental, economic, and societal benefits.
- (3) The potential of the technology to be widely used, have broad application, and/or to impact large segments of the population.

### **F. Phase III**

#### **(THIS SOLICITATION IS FOR PHASE I PROPOSALS ONLY)**

The EPA strongly encourages Phase II awardees who do not think they will be able to achieve full-scale commercialization by the end of Phase II to diligently plan for and pursue during Phase II non-EPA SBIR sources of funding to achieve full-scale commercialization and utilization of their technology. That third phase could be funded by:

- (1) Non-Federal sources of capital—including investors, commercial partners, licensing, etc.
- (2) Federal non-SBIR sources that support any necessary continued R&D and product development.
- (3) Federal non-SBIR funds for purchasing and/or domestic and international marketing of the technology.

The objective of Phase III, where appropriate, is for the small business to pursue commercialization objectives resulting from the Phase I/II R/R&D activities. The SBIR program does not fund Phase III.

## **G. Guidelines**

Each offeror submitting a Phase I proposal must qualify as a small business for research or R&D purposes at the time of award of the Phase I and Phase II funding agreements. In addition, the primary employment of the principal investigator must be with the small business firm, both at the time of contract award and during the conduct of the proposed research. Principal investigators who appear to be employed by a university must submit a letter from the university stating that the principal investigator, if awarded a SBIR contract, will become a less-than-half-time employee of the university.

Also, a principal investigator who appears to be a staff member of both the offeror and a second employer must submit a letter from the second employer stating that, if awarded a SBIR contract, s/he will become a less than half-time employee of the second employer. Letters demonstrating that these requirements have been fulfilled shall be submitted prior to contract award to the EPA Contracting Officer via the FedConnect web portal ([www.fedconnect.net](http://www.fedconnect.net)). Failure to do so may jeopardize award. Also, for Phase I, the research or R&D work must be performed in the United States. (For the definition of the “United States”, see Section II. J.)

## **H. Inquiries**

All inquiries concerning this solicitation shall be referred to the EPA Contracting Officer:

All inquiries concerning this solicitation shall be submitted to the EPA Contracting Officer Jeffery Clodfelter via the FedConnect web portal ([www.fedconnect.net](http://www.fedconnect.net)).

## **I. Fraud, Waste, and Abuse**

To report fraud, waste, or abuse in EPA programs, contact the OIG Hotline by:

E-mail: [OIG\\_Hotline@epa.gov](mailto:OIG_Hotline@epa.gov)

Postal Mail:  
EPA Inspector General Hotline  
1200 Pennsylvania Avenue NW Mail code 2431T

Phone: 1-888-546-8740  
Fax: 1-202-566-2599

## **II. DEFINITIONS**

For purposes of this solicitation, the following definitions apply:

### **A. 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 need; or
- (3) A systematic application of knowledge toward the production of useful materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements.

## **B. Funding Agreement**

Any contract, grant, or cooperative agreement entered into between any Federal Agency and any small business concern for the performance of experimental, developmental, or research work, including products or services, funded in whole or in part by the Federal Government.

## **C. Subcontract**

Any agreement, other than one involving an employer-employee relationship, entered into by an awardee of a funding agreement for purpose of obtaining supplies or services for the performance of the original funding agreement.

## **D. Small Business Concern**

A small business concern is one that, at the time of award of Phase I and Phase II contracts, meets all of the following criteria:

- (1) Is organized for profit, with a place of business located in the United States;
- (2) Is more than 50 percent owned and controlled by one or more individuals who are citizens of, or permanent resident aliens in, the United States, or by another for-profit business concern that is more than 50% owned and controlled by one or more individuals who are citizens of, or permanent resident aliens in, the United States; and
- (3) Has no more than 500 employees, including affiliates;
- (4) Is in the legal form of an individual proprietorship, partnership, limited liability company, corporation, joint venture, association, trust, or cooperative, except that, where the form is a joint venture, there can be no more than 49 percent participation by business entities in the joint venture.

## **E. Socially and Economically Disadvantaged Small Business Concern**

A socially and economically disadvantaged small business concern is one that is at least 51% owned and controlled by one or more socially and economically disadvantaged individuals, or an Indian tribe, including Alaska Native Corporations (ANCs), a Native Hawaiian Organization (NHO), or a Community Development Corporation (CDC). Control includes both the strategic planning (as that exercised by boards of directors) and the day-to-day management and administration of business operations. See 13 CFR 124.109, 124.110, and 124.111 for special rules pertaining to concerns owned by Indian tribes (including ANCs), NHOs, or CDCs, respectively.

## **F. Socially and Economically Disadvantaged Individual**

A member of any of the following groups:

- (1) Black Americans;
- (2) Hispanic Americans;
- (3) Native Americans (American Indians, Eskimos, Aleuts, or Native Hawaiians);
- (4) Asian-Pacific Americans (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China (including Hong Kong), Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Fiji, Tonga, Kiribati, Tuvalu, or Nauru);
- (5) Subcontinent Asian Americans (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal); and

- (6) Other groups designated from time to time by SBA pursuant to Section 124.103(d) of the 13 CFR Ch.1 (1-1-02 Edition).

### **G. Woman-Owned Small Business Concern**

A small business concern that is at least 51 percent owned by and controlled by a woman or women. Control includes both the strategic planning (as that exercised by boards of directors) and the day-to-day management and administration of business operations.

### **H. Historically Underutilized Business Zone (HUBZone)**

A small business concern meeting the following requirements:

- (1) It must be a small business by SBA standards;
- (2) It must be owned and controlled at least 51% by U.S. citizens, or a Community Development Corporation, an agricultural cooperative, or an Indian tribe;
- (3) Its principal office must be located within a “Historically Underutilized Business Zone,” which includes lands considered “Indian Country” and military facilities closed by the Base Realignment and Closure Act;
- (4) At least 35% of its employees must reside in a HUBZone.

### **I. Primary Employment**

More than one-half of the principal investigator's time is spent in the employ of the small business concern.

### **J. United States**

The 50 States, the Territories and possessions of the Federal Government, the Commonwealth of Puerto Rico, the District of Columbia, the Republic of the Marshall Islands, the Federated States of Micronesia, and the Republic of Palau.

### **K. Commercialization**

The process of developing marketable products or services and producing and delivering products or services for sale (whether by the originating party or by others) to Government or commercial markets.

### **L. SBIR Technical Data**

All data generated during the performance of a SBIR award.

### **M. SBIR Technical Data Rights**

The rights a small business concern 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.

## **III. CERTIFICATIONS**

The Section K Representations and Certifications are located in Appendix 4. Refer to IV., Proposal Preparation Instructions and Requirements, Section G. Attachment 4: Representations and Certifications for instructions on proposal preparation.

**Please Note: Majority Ownership in Part by Multiple Venture Capital, Hedge Fund, and Private Equity Firms.** For this EPA SBIR FY 2017 solicitation, the EPA’s SBIR Program will not accept proposals from or make awards to small business concerns that are owned in majority part by multiple venture capital operating companies,

hedge funds, or private equity firms. **Small business concerns with such ownership will not be considered for award under this solicitation.**

## **IV. PROPOSAL PREPARATION INSTRUCTIONS AND REQUIREMENTS**

### **A. Proposal Page Limit and Cover Sheet**

Proposals shall be submitted in Portable Document Form (PDF) in response to this Phase I solicitation. Proposals shall not exceed a total of **25 pages**, one side only. Exceptions being the requirements set forth in Section IV. C. (12) “Company SBIR Commercialization History” by submitting Appendix 6 and the one page print out showing the company has registered in the SBA company registry (described in Section V. E). The **25 pages** shall include the cover page, budget, and all enclosures or attachments. Pages (including enclosures or attachments such as letters of recommendation) should be of standard size (8 ½ in x 11 in; 21.6 cm x 27.9 cm) with 2.5 cm margins and type no smaller than 10 point font size. All pages shall be consecutively numbered. Any additional attachments, appendices, or references beyond the 25-page limitation (unless specifically requested in this solicitation) shall result in the proposal not being considered for review or award. A letter of transmittal is not necessary. If a letter of transmittal is attached it will be counted as page 1 of the proposal.

**Proposals in excess of the 25 page limitation shall not be considered for review or award. Your entire proposal (including appendices) shall be submitted through FedConnect as ONE document in PDF. Only proposals received via FedConnect as ONE PDF by the deadline identified above will be considered for award.**

The offeror shall complete the Proposal Cover Sheet (Appendix 1) of this solicitation which has the relevant solicitation number and applicable research topic code and corresponding topic title and use it as page 1 of the proposal. The offeror shall select one (and only one) research topic code and the corresponding topic title on the cover sheet. It is the complete responsibility of offerors to select and identify the best research topic code and the corresponding topic title for their proposal. **No other cover sheet shall be permitted.** Do not use cover sheets from previous years’ solicitations; they include obsolete research topics and corresponding topic codes. When downloading the solicitation from the Internet, Appendix 1 may print on no more than two pages, but Appendix 1 will only count as one page. If Appendix 1 exceeds two pages, any additional pages will count toward the 25-page limitation. Offerors may reformat the forms to correct spacing and pagination errors; however, identical information shall be provided.

The cover sheet shall contain the signatures of the principal investigator and the corporate/business official authorized to sign the proposal. The total costs requested on Appendix 1 (Proposal Cover Sheet) must match the total costs proposed on Appendix 3 (SBIR Proposal Summary Budget). The amount must not exceed \$100,000 on Appendix 1 and 3. If your firm intends to incur any additional costs beyond the budget limit of \$100,000, please provide a statement indicating that your firm will be responsible for any additional cost beyond the budget limits.

Offerors should prepare their technical proposal as succinctly as possible. Quality of information is more important than quantity. Elaborate brochures or other presentations beyond those which are sufficient to present a complete and effective proposal are neither necessary nor desired and will not be read. Clarity, brevity and logical organization should be emphasized during proposal preparation.

### **B. Project Summary**

Each proposal must include a Project Summary which will be an important document for all stages of the review process. The offeror shall complete the Project Summary form (Appendix 2) and use it as page 2 of their proposal.

Offerors shall properly enter their Phase I Research Topic Code and Topic Title on both their Proposal Cover Sheet (Appendix 1) and Project Summary (Appendix 2).

The Project Summary **shall** be limited to one page and not to exceed 200 words. The Project Summary **shall** include the following information (must be publishable, i.e., not proprietary): The specific need for the technology, what the technology would do to meet that need, technical feasibility, application(s), end users, evidence of willing buyers, size of the potential market, performance compared to current technologies and potential for environmental benefits.

In summarizing anticipated results, the implications of the approach and the potential commercial applications of the research shall be stated. **THE PROJECT SUMMARY IS USED EXTENSIVELY DURING THE EXTERNAL PEER REVIEW AND INTERNAL PROGRAMMATIC REVIEW.** The project summary and proposal title from Appendix 2 of the successful proposals will be published by EPA and, therefore, shall not contain proprietary information. No changes shall be allowed.

When downloading the solicitation from the Internet, Appendix 2 may print on no more than two pages, but Appendix 2 will only count as one page. Offerors may reformat the forms to correct spacing and pagination errors; however, identical information shall be provided. If Appendix 2 exceeds two pages, any additional pages will count toward the 25-page limitation.

### **C. Technical Content: Phase I Proposal**

The Phase I technical proposal requirement is described in this section. Begin the main body of the Phase I technical proposal on page 3, after the proposal cover sheet and project summary. Note that there are FOUR attachments required as part of the complete Phase I proposal as follows:

- Attachment 1: Commercialization Plan (See Section D);
- Attachment 2: Phase I Quality Assurance Statement (See Section E);
- Attachment 3: Cost Breakdown/Proposed Budget (See Section F);
- Attachment 4: Representations and Certifications (See Section G).

The main body of the technical proposal shall contain sections that, at a minimum, respond to each of the following twelve (12) requirements:

- (1) **Problem.** Identification and Significance of the Problem or Opportunity. Provide a clear statement of the specific technical problem or opportunity addressed.

**INFORMATION ON THE ENVIRONMENTAL BENEFITS ASSOCIATED WITH THE TECHNOLOGY IS A VERY IMPORTANT PART OF THE EXTERNAL PEER REVIEW AND THE EPA INTERNAL PROGRAMMATIC REVIEW.** Where appropriate, proposals should describe the positive and negative environmental impacts based on an assessment of the full life cycle of the new product or technology. Life Cycle Assessment (LCA) refers to the analysis of impacts throughout all stages of a product or process from production to use to disposal. Integration of a life cycle perspective into the environmental analysis typically considers impacts from raw materials extraction, manufacture, packaging, distribution, use, and disposal. Proposals do not have to have a formal LCA, but should integrate a life cycle perspective into the environmental analysis.

- (2) **Phase I Objectives.** State the specific objectives of the Phase I research and development effort,

including the technical questions it will try to answer. That information shall be used to determine the feasibility of the proposed approach.

- (3) **Phase I Work Plan.** Provide a detailed description of the Phase I R/R&D plan. The plan shall indicate what will be done, where it will be done and how the R/R&D will be carried out. The work planned to achieve each objective or task shall be discussed in detail to enable a complete scientific and technical evaluation of the work plan. A work schedule shall also be provided.
- (4) **Related Research or R&D.** Describe significant research or R&D that is directly related to the proposal including any conducted by the project manager or principal investigator or by the proposing firm. Describe how the research or R&D relates to the proposed effort, and any planned coordination with outside sources. The proposer must persuade reviewers of his/her awareness of recent research or R&D conducted by others in the specific topic area.
- (5) **Key Personnel and Bibliography of Directly Related Work.** Identify key personnel involved in Phase I including their directly-related education, experience, and bibliographic information. Where vitae are extensive, summaries that focus on the most relevant experience or publications are desired.
- (6) **Relationship with Future Research or R&D.** Describe the anticipated results of the proposed approach if the project is successful (Phase I and II). A discussion of cost-effectiveness is paramount, especially comparing the state-of-the-art approaches with the proposed approach. Discuss the significance of the Phase I effort in providing a foundation for Phase II R/R&D effort.
- (7) **Facilities.** Provide a detailed description, including the availability and location of instrumentation and physical facilities proposed for Phase I, shall be provided.
- (8) **Consultants.** Involvement of consultants in the planning and research stages of the project is permitted. If such involvement is intended, it shall be described in detail.
- (9) **Commercialization Plan.** Provide a brief summary of the important elements of the Commercialization Plan. This section is only a brief summary of the plan. **Note: The Phase I Proposal shall include a copy of the Commercialization Plan.** (See Section D below.)

NOTE: In accordance with the SBIR/STTR Reauthorization Act of 2011, the EPA is able to provide discretionary commercialization assistance to SBIR awardees. The Agency may provide up to \$5,000 of SBIR funds for technical assistance per award. The EPA intends to provide Phase I awardees with technical assistance through a separate EPA arrangement. For Phase I, this assistance will be in addition to the award amount. If you wish to receive commercialization assistance from the EPA vendor (Foresight), you do not need to include this in your budget.

- (10) **Similar or Closely Related SBIR Awards.** If the small business concern has received ANY prior Phase I or Phase II award(s) from EPA or any Federal agency for similar or closely related research in the prior 5 fiscal years, submit the name of the awarding agency, date of award, funding agreement number, amount, topic or subtopic title, follow-on agreement amount, source and date of commitment and current

commercialization status. Describe the technical differences and reasons why the proposed Phase I research is different from research conducted under prior SBIR awards. (This required proposal information **shall** be counted toward the 25 page proposal limitation.)

- (11) **Duplicate or Equivalent SBIR Proposals.** A firm may elect to submit essentially equivalent work under other federal program solicitations. In these cases, a statement shall be included in each such proposal indicating: the name and address of the agencies to which proposals were submitted or from which awards were received; date of proposal submission or date of award; title, number, and date of solicitations under which proposals were submitted or awards received; specific applicable research topics for each proposal submitted or award received; titles of research projects; name and title of project manager or principal investigator for each proposal submitted or award received. (This required proposal information **shall** be counted toward the 25 page proposal limitation.)
- (12) **Company SBIR Commercialization History.** A Company SBIR Commercialization History is required for all offerors certifying receipt of previous SBIR Phase II awards from any Federal agency. The Commercialization History Template in Appendix 6 **MUST** be used. All items must be addressed in the format outlined in this template. Changes to the template, additional narratives and/or commercialization history documents from other agencies are not permitted. (This required proposal information **shall not** be counted toward the 25-page proposal limitation.)

#### **D. Attachment 1: Commercialization Plan**

The offerors shall provide a Phase I Commercialization Plan of 2-3 pages, and it **shall** be counted toward the 25 page proposal limitation. The Phase I Commercialization Plan shall explain what will be done during Phase I to decide on applications, markets, production, and financing. Comprehensive business plans (that are company rather than project oriented) are not desired. The Commercialization Plan at a minimum needs to respond to each of the requirements below:

- (1) **Company:** Brief description of the company, its principal field(s) of interest, size, current products and sales.
- (2) **SBIR Project:** A concise description of the project and its key technical objectives.
- (3) **Market Research:** Describe the results of offeror's initial market research that gives confidence that the technology can be commercialized.
- (4) **Commercial Applications:** Potential commercial application(s) of the research results specifying customers and specific needs that will be satisfied.
- (5) **Currently Used Technologies:** Briefly describe the technologies that are currently being used to meet the needs of the topic. Also, describe (a) the performance criteria and (b) the performance of the currently used technologies as measured by those criteria. These criteria should be those by which the performance of the proposed technology will be measured.
- (6) **Patent/Intellectual Property Status:** Have you, or do you intend to, file for one or more patents as a result of the SBIR project? What else are you doing to protect your intellectual property (IP)?
- (7) **Innovation:** What is particularly innovative about the anticipated technology or products? (Innovation may



be expressed in terms of applications, performance, efficiencies or reduced cost.)

- (8) **Competitive Advantages:** What significant advantages in application, performance technique, efficiency, or costs, do you anticipate your new technology will have over existing technology?
- (9) **Markets:** What are the anticipated specific markets for the resulting technology, their estimated size, classes of customers, and your estimated market share five years after the Phase I project is completed and/or first sales?
- (10) **Competition:** Who are the major competitors in the markets, present and/or anticipated?
- (11) **Production Plan:** Briefly describe how you plan to produce your product. Do you intend to manufacture it yourself, subcontract the manufacturing, enter into a joint venture or manufacturing agreement, license the product, etc.? When do you anticipate doing so?
- (12) **Marketing Plan:** Briefly describe the approach and steps you plan to take to commercialize the research results from the end of Phase I to significant sales. Do you plan to market the product yourself, through dealers, contract sales, marketing agreements, joint venture, sales representatives, foreign companies, etc.?
- (13) **Financing Plan:** Briefly describe your plan to raise money to support your commercialization plan. In describing any arrangements for non-Federal capital commitments, the proposal shall include the following:
  - (a) The name and address of commercial firm
  - (b) Nature of arrangements (personal investment, venture capital investment, crowd sourcing, intent to license, etc.)
  - (c) Amount
  - (d) Degree of formality (verbal agreement, letter of interest, signed contract, actual end-user, etc.)
  - (e) Conditions of arrangements
  - (f) Any available written evidence of third party agreement

## **E. Attachment 2: Phase I Quality Assurance Statement (QAS)**

Offerors must state whether or not their proposal involves data collection or processing, environmental measurements, modeling, or the development of environmental technology (whether hardware-based or via new techniques). The QAS describes the processes that will be used to assure that results of the research satisfy the intended project objectives. The EPA is particularly interested in the quality controls for data generation and acquisition, and how data validation and usability will be verified. This QAS **shall** not exceed one page, and it **shall** be counted toward the 25-page proposal limitation. The QAS shall briefly address each of the sections below. If a section does not apply, provide a brief justification of why.

- (1) Identify the individual who will be responsible for the quality assurance (QA) and quality control (QC) aspects of the research along with a brief description of this person's functions, experience and authority within the firm. Describe the firm's general approach for conducting quality research. (QA is a system of management activities to ensure that a process or product is of the type and quality needed for the project. QC is a system of activities that measure the attributes and performance of a process or product against the standards defined in the project to verify that they will meet those stated requirements.)
- (2) Discuss project objectives, including quality objectives, any hypotheses to be tested, and the quantitative and/or qualitative procedures that will be used to evaluate the success of the project. Include any plans for

peer or other reviews of the study design or analytical methods.

- (3) Address the collection of new primary data, if applicable: (Note: In this case the word “sample” is intended to mean any finite part of a statistical population whose properties are studied to gain information about the whole. If certain attributes listed below do not apply to the type of samples to be used in the research, simply explain why those attributes are not applicable.)

Discuss the plan for sample collection and analysis. As applicable, include sample type(s), frequency, locations, sample sizes, sampling procedures, and the criteria for determining acceptable data quality (e.g., precision, accuracy, representativeness, and completeness, comparability, or data quality objectives). Describe the procedures for the handling and custody of samples including sample collection, identification, preservation, transportation, storage and how the accuracy of test measurements will be verified. Describe or reference each analytical method to be used, any QA or QC checks or procedures with the associated acceptance criteria, and any procedure that will be used in the calibration and performance evaluation of the analytical instrumentation. Discuss the procedures for overall data reduction, analysis and reporting. Include a description of all statistical methods to make inferences and conclusions, acceptable error rates and any statistical software to be used.

- (4) Address the use of existing/secondary data (i.e., data previously collected for other purposes or from other sources), if applicable: Describe or reference each analytical method to be used, any QA or QC checks or procedures with the associated acceptance criteria, and any procedures that will be used in the calibration and performance evaluation of the analytical instrumentation. Discuss the procedures for overall data reduction, analysis and reporting. Include a description of all statistical methods to make inferences and conclusions, acceptable error rates and any statistical software to be used.

- (5) Address method development, if applicable: (Note: The data collected for use in method development or evaluation should be described in the QAP as per the guidance in Sections 3 and/or 4 above.) Describe the scope and application of the method, any tests (and measurements) to be conducted to support the method development, the type of instrumentation that will be used and any required instrument conditions (e.g., calibration frequency), planned QC checks and associated criteria (e.g., spikes, replicates, blanks), and tests to verify the method’s performance.

- (6) Address development or refinement of models, if applicable: (Note: The data collected for use in the development or refinement of models should be described in the QAP as per the guidance in sections 3 and/or 4 above.)

Discuss the scope and purpose of the model, key assumptions to be made during development/refinement, requirements for code development and how the model will be documented. Discuss verification techniques to ensure the source code implements the model correctly. Discuss validation techniques to determine that the model (assumption and algorithms) captures the essential phenomena with adequate fidelity. Discuss plans for long- term maintenance of the model and associated data.

- (7) Address development or operation of environmental technology, if applicable: (Note: The data collected for use in the development or evaluation of the technology should be described in the QAP as per the guidance in sections 3 and/or 4 above.)

Describe the overall purpose and anticipated impact of the technology. Describe the technical and quality specifications of each technology component or process that is to be designed, fabricated, constructed

and/or operated. Discuss the procedure to be used for documenting and controlling design changes. Discuss the procedure to be used for documenting the acceptability of processes and components, and discuss how the technology will be benchmarked and its effectiveness determined. Discuss the documentation requirements for operating instructions/guides for maintenance and use of the system(s) and/or process(s).

- (8) Discuss data management activities (e.g., record-keeping procedures, data-handling procedures, and the approach used for data storage and retrieval on electronic media). Include any required computer hardware and software and address any specific performance requirements for the hardware/software configuration used.

A more detailed Proposal Quality Assurance Plan shall be required in Phase II. The plan shall be required as part of the first monthly report under the Phase II contract.

### **F. Attachment 3: Phase I Cost Breakdown/Proposed Budget**

Complete the budget form in Appendix 3 and incorporate the budget form bearing the signature immediately after proposal Section IV.E. Attachment 2: Phase I Quality Assurance Statement. The completed budget form will count as one page in the 25-page limit. If budget explanation pages are included, they will count toward the 25-page limit. Offerors are encouraged to include travel expenses on the budget form to attend a one-day SBIR Phase I Kick-Off Meeting in Washington, DC, soon after the Phase I awards are made.

### **G. Attachment 4: Representations and Certifications**

Attachment 4 (see Appendix 4) is a Representations and Certifications Package. Please fill out completely, sign, and return with the proposal. Failure to complete fully and sign this package and return with the proposal could delay award. (This required proposal information **shall not** be counted toward the 25-page proposal limitation.)

## **V. METHOD OF SELECTION AND EVALUATION CRITERIA**

All Phase I proposals will be initially screened to determine responsiveness. As noted in Section IV, proposals exceeding the 25-page limitation (unless specifically requested in this solicitation) will not be considered for review or award. Also, as noted in Section I, any proposal (a) addressing more than one research topic, (b) and/or failing to identify the research topic by topic code on the cover page, (c) and/or failing to stay within the exact language of the topic will not be considered for review or award.

Proposals passing this initial screening will be subject to a two-stage evaluation process. Proposals will be peer reviewed for technical and commercial merit by external peer reviewers, using the technical and commercialization evaluation criteria described below. Then proposals that receive ratings of “Excellent” and “Very Good” from the external peer review panel will be reviewed by internal programmatic reviewers that consider programmatic balance, Agency priorities, and available funding. EPA is under no obligation to fund any proposal or any specific number of proposals in a given topic. It also may elect to fund several or none of the proposed approaches to the same topic or subtopic.

### **A. External Peer Review**

All Phase I proposals determined responsive to the solicitation will be evaluated and judged on a competitive basis by peer reviewers from outside of the EPA. All peer reviewers will be required to sign an agreement to protect the confidentiality of all proposal material. A copy of the confidentiality agreement is available upon request. While members of the public may obtain copies of these forms, the identities of the reviewers will not be released. The peer reviewers will rate each proposal on its own merits. The external peer review panel will review all proposals

using the technical evaluation criteria described in Section B below. Based on this review, the panel will assign adjectival ratings of “Excellent,” “Very Good”, “Good”, “Fair” or “Poor” to each proposal. Proposals rated “Good”, “Fair” or “Poor” will not be considered for award. EPA program managers will then rank all “Highly Recommended” and “Recommended” proposals based on Agency program priorities, balance, relevancy to EPA needs, and program funds.

The evaluation criteria that the reviewers will use, which are provided below, give equal weight to factors affecting the likely commercial success of the project and the likely technical success. The reviewers will rate individual proposals, and then meet as one or more panels that will produce a final rating for each proposal.

The EPA does not permit current Phase I contractors, Phase I offerors, or Phase II offerors to participate in the peer review. All proposals will be reviewed by external (non-EPA) peer reviewers. All peer reviewers are required to describe their SBIR contracts and proposals, sign an agreement to protect the confidentiality of all proposal materials they review and the discussions within the peer review panel, and certify that no conflict of interest exists between them and the offeror. While members of the public may obtain copies of these forms, the identities of the reviewers will not be released.

## **B. Phase I Evaluation Criteria**

The following commercialization and technical criteria will be used to evaluate Phase I proposals. Each of the peer review criteria are of equal importance.

### **Phase I Commercialization Criteria**

- (1) **Identified Need, Widespread Utilization, and Business Strategy:** Degree to which the proposal identifies an important human health or environmental need. The degree to which the proposal provides convincing market research that the technology will be widely purchased and used to meet that need. Quality of the company’s business strategy, including its value proposition.
- (2) **Management Capabilities and Principal Investigator (PI) Experience and Commitment:** Evidence that the owners and managers of the company, the principal investigator (PI), supporting staff, advisors, and consultants have management and business expertise to successfully complete the project within six months. Degree to which the company (including the PI) has a track record of creating innovative technologies and successfully bringing them to market (including prior SBIR awards described in Appendix 6). Degree to which the PI is committed to developing and commercializing this technology.
- (3) **Market Disruption Potential and Platform Technology Potential:** Degree to which the technology provides an innovative approach to solving a key problem within the topic. Degree to which, if successful, the technology would transform the way that problem is solved and would do so affordably and in an environmentally sustainable manner. Degree to which this is a “platform” technology, from which other useful technologies could be developed and commercialized.

### **Phase I Technical Criteria**

- (1) **Technical Soundness and Research Plan:** Soundness of the scientific and technical principles underlying the proposed technology. Robustness of the research plan and its likelihood of establishing the technical feasibility of the proposed technology within six months.
- (2) **Demonstrations Capability and Performance Evaluation Criteria:** Availability of facilities and capability to demonstrate and evaluate performance of the technology in the field under relevant and real operating conditions. Robustness of demonstration plans. Relevance of the planned demonstrations to the

topic and to the identified market need.

- (3) **Life Cycle Perspective and Quality Assurance Statement:** Degree to which life cycle perspective has been and will be applied to the production and use of the technology. Degree to which potential negative environmental impacts of the technology are assessed and addressed. Adequacy of the Quality Assurance Statement.

Per the clause entitled “Principal Investigator (PI) Substitution due to Death, Resignation or Illness”, if the need for PI substitution is substantiated, offerors acknowledge and affirm this is not considered discussions, that there will be no competitive range determination, and that no discussions will be conducted. The qualifications of the substitute will be evaluated in accordance with the stated criteria.

### **C. EPA Programmatic Relevancy Review**

Phase I proposals that receive ratings of “Excellent” and “Very Good” from the external peer review panel will be subject to an internal programmatic relevancy review by EPA program managers. Please note that not all of the proposals rated “Excellent” and “Very Good” will receive a contract award. Many of these proposals are worthy of funding but EPA does not have sufficient SBIR budget to fund them. Proposals will be rated using the Phase I Programmatic Relevancy review criteria described below. Projects will not be funded if EPA determines the proposed research is already being supported by EPA or another source. Each of the programmatic relevancy review criteria are of equal importance.

#### **Phase I Internal Programmatic Relevancy Review Criteria**

- (1) The potential of the technology to meet Agency program priorities as addressed in the solicitation topic.
- (2) The potential of the technology to advance sustainability, including environmental, economic, and societal benefits.
- (3) The potential of the technology to be widely used, have broad application, and/or to impact large segments of the population.

### **D. Release of Proposal Review Information**

After final award decisions have been announced, the technical evaluation of the offeror’s proposal will be provided to the offeror. The identity of the reviewer(s) shall not be disclosed.

### **E. Company Registry Requirements**

- (1) The Small Business Administration (SBA) maintains and manages a Company Registry at [www.SBIR.gov](http://www.SBIR.gov) to track ownership and affiliation requirements for all companies applying to the SBIR Program. The SBIR Policy Directive requires each small business concern (SBC) applying for a Phase I or Phase II award to register in the Company Registry prior to submitting a proposal.
- (2) Offerors must provide a .pdf copy of their SBA SBC registration and shall append this document to the last page of your technical proposal. This page will NOT count towards the 25 page limit.
- (3) All SBCs will report and/or update ownership information to SBA prior to each SBIR proposal submission or if any information changes prior to award. For example, if a concern that registers on the Company Registry becomes majority-owned by multiple venture capital operating companies, hedge funds, or private equity firms after the time it submitted its initial proposal (or other formal response) to a Phase I or Phase II SBIR announcement or solicitation, the SBC must update the Company Registry.

## VI. CONSIDERATIONS

### A. Awards

The EPA anticipates for SBIR Phase I the award of approximately eighteen (18) firm-fixed-price contracts of up to \$100,000 each, including profit. It is expected that these contracts will be awarded with a contract start date of June 1, 2017. The period of performance for the contracts should not exceed six (6) months. The primary consideration in selecting proposals for award will be the technical and commercial merit of the proposal. Proposals shall be evaluated in accordance with the Technical Evaluation Criteria stated in V.A., above. Source selection will not be based on a comparison of cost or price. However, cost or price will be evaluated to determine whether the price, including any proposed profit, is fair and reasonable, and whether the offeror understands the work and is capable of performing the contract.

This current solicitation is for Phase I only, and the EPA is not obligated to fund any specific Phase I proposal. Funds are not presently available for this contract.

The EPA anticipates for SBIR Phase II the award of approximately eight (8) Phase II awards, each in the amount of \$300,000 with a 24-month term of performance.

The EPA's obligation under this contract is contingent upon the availability of appropriated funds from which payment for contract purposes can be made. No legal liability on the part of the EPA for any payment may arise until funds are made available to the Contracting Officer for this contract, and until the Contractor receives notice of such availability, to be confirmed in writing by the Contracting Officer.

### B. Phase I Contract Reporting Requirements

- (1) During the duration of the contract, the contractor shall furnish a monthly report stating progress.

One (1) copy of the report shall be submitted electronically to the EPA Contract level Contracting Officer Representative, the EPA Technical Specialist(s), and the EPA Contracting Officer. All reports shall include the following information: EPA contract number, company name, project title and period covered by report. Specific areas of interest shall include progress and difficulties encountered during the reporting period, and a statement of activities anticipated during the subsequent reporting period. The report shall include any changes in personnel associated with the project. **Also, the first month's report shall contain an updated work plan and schedule of accomplishments for the subsequent months of the project.** The Monthly Report shall include, as an attachment, a copy of the monthly invoice for the same period. The monthly reports shall be submitted within 7 calendar days after the end of the reporting periods.

- (2) One copy of a comprehensive final report on the Phase I project shall be submitted electronically by the completion date of the contract. One (1) copy of the report shall be submitted electronically to the EPA Contract level Contracting Officer Representative, the EPA Technical Specialist(s) and the EPA Contracting Officer. This final report shall include a single-page project summary as the first page, identifying the purpose of the research, a brief description of the conducted research, research findings or results, verification reports, and commercial applications of the research in a final paragraph. The balance of the report shall indicate in detail the research objectives, research work carried out, results obtained, and estimates of technical feasibility. A copy of the latest commercialization plan developed during Phase I shall be included in the final report. The contractor shall submit the Final Report Certification with the Final Report (see Appendix 4 Representation and Certifications K.8).

- (3) One (1) copy of a 2- to 3-page executive summary of the final report for Phase I shall be submitted electronically to the Contract level Contracting Officer Representative, the EPA Technical Specialist(s), and the EPA Contracting Officer by the completion date of the contract. The report shall be cleared for the general public and will be published on EPA's SBIR Web site ([www.epa.gov/sbir](http://www.epa.gov/sbir)). This shall be a true summary of the report, including the purpose of the project, work carried out and results. The summary should stress innovation and potential commercialization. The executive summary shall be submitted by the completion date of the contract.
- (4) EPA support shall be credited in any and all reports, publications, presentations, and announcements with the following statement: *“This work was supported by the EPA SBIR Program under contract number EP-D-17-xxx.”*

### **C. Payment Schedule**

Monthly Phase I progress payments will be made at eighteen percent (18%) of the total contract price upon receipt and acceptance of a proper invoice with each of the first five monthly reports. The remainder shall be paid upon receipt and acceptance of the final report. Pursuant to the provisions of FAR 52.232-25, PROMPT PAYMENT (JUL 2013), payment will be rendered within thirty (30) days after receipt of a proper invoice for each reporting period. Appropriate provisions will be included in the contract.

### **D. Innovations, Inventions, and Patents**

#### **LIMITED RIGHTS INFORMATION AND DATA**

- (a) PROPRIETARY INFORMATION.

Information contained in unsuccessful proposals will remain the property of the offeror. The EPA may, however, retain copies of all proposals. Public release of information in any proposal submitted will be subject to existing statutory and regulatory requirements.

If proprietary information is provided by an offeror in a proposal, 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 offeror with the term “confidential proprietary information” and the following legend must appear on the cover page of the proposal:

“This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed—in whole or in part—for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of—or in connection with—the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained on pages\_\_\_; of this proposal.”

Any other legend may be unacceptable to the EPA and may constitute grounds for removing the proposal from further consideration, without assuming any liability for inadvertent disclosure. The EPA will limit dissemination of such information to within official channels.

(b) ALTERNATIVE TO MINIMIZE PROPRIETARY INFORMATION. **Offerors shall limit proprietary information to only that absolutely essential to their proposal.**

(c) RIGHTS IN DATA DEVELOPED UNDER SBIR FUNDING AGREEMENTS.

(1) The Contractor is authorized to affix the following "SBIR Rights Notice" to SBIR data delivered under this contract and the Government will thereafter treat the data within the provisions of FAR 52.227-20, RIGHTS IN DATA--SBIR PROGRAM (MAY 2014). If the Contractor does not affix the Notice to data delivered to the Government in performance of the contract, the Government will have unlimited rights to all data delivered, except for copyright data approved by the Contracting Officer and registered under Title 17 U.S.C. 401 or 402. If the claim to copyright data is made, the Contractor shall affix the applicable copyright notice. The SBIR RIGHTS NOTICE (DEC 2007) is as follows:

"These SBIR data are furnished with SBIR rights under Contract No. \_\_\_\_\_ (and Subcontract if appropriate). For a period of four (4) years, unless extended in accordance with FAR 27.409(h), after acceptance of all items to be delivered under this contract, the Government agrees to 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 Contractor, except that, subject to the foregoing use and disclosure prohibitions, these data may be disclosed for use by support Contractors. 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. This Notice shall be affixed to any reproductions of these data, in whole or in part."

(2) SBIR technical data rights apply to all SBIR awards, including subcontracts to such awards, that fall within the statutory definition of Phase I, II, or III of the SBIR Program, as described in §4 of this Policy Directive. The scope and extent of the SBIR technical data rights applicable to Federally-funded Phase III awards is identical to the SBIR data rights applicable to Phases I and II SBIR awards. The data rights protection period lapses only:

- (i) upon expiration of the protection period applicable to the SBIR award; or
- (ii) by agreement between the awardee and the agency.

(d) COPYRIGHTS. With prior written permission of the Contracting Officer, the Awardee normally may copyright and publish (consistent with appropriate national security considerations, if any) material developed with EPA support. The EPA receives a paid-up license for the Federal Government and requires that each publication contain an appropriate acknowledgment and disclaimer statement.

(e) PATENTS. Small business concerns normally may retain the principal worldwide patent rights to any invention developed with Government support. The EPA receives a paid-up license for Federal Government use, reserves the right to require the patent holder to license others in certain circumstances, and requires that anyone exclusively licensed to sell the invention in the United States must normally manufacture it domestically. To the extent authorized by 35 U.S.C. 205, the Government will not make public any information disclosing a Government-supported invention for a four-year period to allow the Awardee a reasonable time to pursue a patent.



- (f) Invention reporting. Include requirements for reporting inventions. Include appropriate information concerning the reporting of inventions, for example:

“SBIR awardees must report inventions to the awarding agency within 2 months of the inventor's report to the awardee. The reporting of inventions may be accomplished by submitting paper documentation, including fax.”

Note: Some agencies provide electronic reporting of inventions through the NIH iEdison Invention Reporting System (iEdison System). Use of the iEdison System satisfies all invention reporting requirements mandated by 37 CFR part 401, with particular emphasis on the Standard Patent Rights Clauses, 37 CFR 401.14. Access to the system is through a secure interactive Internet site, <http://www.iedison.gov>, to ensure that all information submitted is protected. All agencies are encouraged to use the Edison System. In addition to fulfilling reporting requirements, the Edison System notifies the user of future time sensitive deadlines with enough lead-time to avoid the possibility of loss of patent rights due to administrative oversight.

## **E. Cost Sharing**

Cost sharing is permitted for proposals under this Program Solicitation; however, cost sharing is neither required nor will it be an evaluation factor when considering your proposals.

## **F. Profit or Fee**

Reasonable fee (estimated profit) will be considered under this solicitation. For guidance purposes, the amount of profit shall not exceed 10 percent (10%) of total project costs.

## **G. Joint Ventures or Limited Partnerships**

Joint ventures and limited partnerships are eligible provided the entity created qualifies as a small business concern as defined in this Program Solicitation.

## **H. Research and Analytical Work**

- (1) For a SBIR Phase I proposal, a minimum of two-thirds of the research and/or analytical effort, as measured by the budget, must be performed by the proposing small business concern, and the balance of one third may be outsourced to a consultant or subcontract or a combination of the two.
- (2) For a Phase II proposal, a minimum of one-half of the research and/or analytical effort, as measured by the budget, must be performed by the proposing small business concern and the balance of one-half may be outsourced to a consultant or subcontract or a combination of the two.

## **I. Contractor Commitments**

Upon award of a contract, the Awardee will be required to make certain legal commitments through acceptance of numerous clauses in the Phase I funding agreements. The outline that follows is illustrative of the types of clauses to which the Contractor would be committed. This list should not be understood to represent a complete list of clauses to be included in Phase I contracts, or to represent the specific wording of such clauses. Copies of the complete terms and conditions are available upon request.

- (1) **STANDARDS OF WORK.** Work performed under the funding agreement must conform to high professional standards.

- (2) INSPECTION. Work performed under the contract is subject to Government inspection and evaluation at all times.
- (3) EXAMINATION OF RECORDS. The Comptroller General (or a duly authorized representative) shall have the right to examine any directly pertinent records of the awardee involving transactions related to this contract.
- (4) DEFAULT. The Government may terminate the contract if the Contractor fails to perform the work contracted.
- (5) TERMINATION FOR CONVENIENCE. The contract may be terminated at any time by the Government if it deems termination to be in its best interest of the Government, in which case the Contractor will be compensated for work performed and for reasonable termination costs.
- (6) DISPUTES. Any dispute concerning the contract that cannot be resolved by agreement shall be decided by the Contracting Officer with the right of appeal.
- (7) CONTRACT WORK HOURS. The awardee may not require an employee to work more than 8 hours a day or 40 hours a week unless the employee is compensated accordingly (for example, overtime pay).
- (8) EQUAL OPPORTUNITY. The awardee will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin.
- (9) AFFIRMATIVE ACTION FOR VETERANS. The awardee will not discriminate against any employee or applicant for employment because s/he is a disabled veteran or veteran of the Vietnam era.
- (10) AFFIRMATIVE ACTION FOR HANDICAPPED. The awardee will not discriminate against any employee or applicant for employment because s/he is physically or mentally handicapped.
- (11) OFFICIALS NOT TO BENEFIT. No Government official shall benefit personally from the SBIR contract.
- (12) COVENANT AGAINST CONTINGENT FEES. No person or agency has been employed to solicit or secure the contract upon an understanding for compensation except bonafide employees or commercial agencies maintained by the Contractor for the purpose of securing business.
- (13) GRATUITIES. The contract may be terminated by the Government if any gratuities have been offered to any representative of the Government to secure the contract.
- (14) PATENT INFRINGEMENT. The Contractor shall report each notice or claim of patent infringement based on the performance of the contract.
- (15) AMERICAN MADE EQUIPMENT AND PRODUCTS. When purchasing equipment or a product under the SBIR contract, the contractor shall purchase only American-made items whenever possible.

## **J. Additional Information**

- (a) The 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 contract, the terms of the contract shall be controlling.
- (b) Before making an award of an SBIR funding agreement, the EPA may request the offeror to submit certain organizational, management, personnel, and financial information to assure the responsibility of the offeror.

- (c) The EPA is not responsible for any monies expended by the offeror before award of any contract.
- (d) This Program Solicitation is not an offer by the EPA and does not obligate the EPA to make any specific number of awards. Also, awards under the SBIR program are contingent upon the availability of funds.
- (e) The EPA SBIR program is not a substitute for existing unsolicited proposal mechanisms. Unsolicited proposals shall not be accepted under the EPA SBIR program in either Phase I or Phase II.
- (f) If an award is made pursuant to a proposal submitted under this Program Solicitation, the Contractor will be required to certify that s/he has not previously been, and is not currently being, paid for essentially equivalent work by any agency of the Federal Government.
- (g) Notwithstanding the relatively broad definition of R/R&D in Section II, Definitions, hereof, awards under this solicitation are limited to APPLIED forms of research. Proposals that are surveys, including market, state-of-the-art, and/or literature surveys, which should have been performed by the offeror prior to the preparation of the proposal, or the preparation of allied questionnaires and instruction manuals, shall not be accepted. If such proposals are submitted, they shall not be considered in compliance with the solicitation intent and, therefore, they shall be considered technically unacceptable.
- (h) The requirement that the offeror designate a topic, and only one topic, (see Section IV.A above) is also mandatory. The EPA receives hundreds of proposals each year, and it has special panels of reviewers for review of each research topic. In order to assure that proposals are evaluated by the correct panel, it is the complete responsibility of the offeror to select and identify the best topic.
- (i) The following clause is incorporated by reference:  
FAR 52.232-25, PROMPT PAYMENT (JUL 2013)
- (j) Instructions to Offerors – Competitive Acquisition, FAR 52.215-1 (Jan 2004).
  - (a) *Definitions.* As used in this provision- Discussions are negotiations that occur after establishment of the competitive range that may, at the Contracting Officer's discretion, result in the offeror being allowed to revise its proposal.  
  
*In writing, writing, or written* means any worded or numbered expression that can be read, reproduced, and later communicated, and includes electronically transmitted and stored information.  
  
*Proposal modification* is a change made to a proposal before the solicitation's closing date and time, or made in response to an amendment, or made to correct a mistake at any time before award.  
  
*Proposal revision* is a change to a proposal made after the solicitation closing date, at the request of or as allowed by a Contracting Officer as the result of negotiations.  
  
*Time*, if stated as a number of days, is calculated using calendar days, unless otherwise specified, and will include Saturdays, Sundays, and legal holidays. However, if the last day falls on a Saturday, Sunday, or legal holiday, then the period shall include the next working day.
  - (b) *Amendments to solicitations.* If this solicitation is amended, all terms and conditions that are not amended remain unchanged. Offerors shall acknowledge receipt of any amendment to this solicitation by the date and time specified in the amendment(s).

(c) *Submission, modification, revision, and withdrawal of proposals.*

- (1) Unless other methods (e.g., electronic commerce or facsimile) are permitted in the solicitation, proposals and modifications to proposals shall be submitted in paper media in sealed envelopes or packages (i) addressed to the office specified in the solicitation, and (ii) showing the time and date specified for receipt, the solicitation number, and the name and address of the offeror. Offerors using commercial carriers should ensure that the proposal is marked on the outermost wrapper with the information in paragraphs (c)(1)(i) and (c)(1)(ii) of this provision.
- (2) The first page of the proposal must show:
  - (i) The solicitation number;
  - (ii) The name, address, and telephone and facsimile numbers of the offeror (and electronic address if available);
  - (iii) A statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation and agreement to furnish any or all items upon which prices are offered at the price set opposite each item;
  - (iv) Names, titles, and telephone and facsimile numbers (and electronic addresses if available) of persons authorized to negotiate on the offeror's behalf with the Government in connection with this solicitation; and
  - (v) Name, title, and signature of person authorized to sign the proposal. Proposals signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.
- (3) *Submission, modification, revision, and withdrawal of proposals.*
  - (i) Offerors are responsible for submitting proposals and any modifications or revisions so as to reach the Government office designated in the solicitation by the time specified in the solicitation. If no time is specified in the solicitation, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that proposal or revision is due.
  - (ii) (A) Any proposal, modification or revision received at the Government office designated in the solicitation after the exact time specified for receipt of offers is late and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late offer would not unduly delay the acquisition; and—
    - (1) If it was transmitted through an electronic commerce method authorized by the solicitation, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of proposals; or
    - (2) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of offers and was under the Government's control prior to the time set for receipt of offers; or
    - (3) It is the only proposal received.

- (B) However, a late modification of an otherwise successful proposal that makes its terms more favorable to the Government will be considered at any time it is received and may be accepted.
- (iii) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the proposal wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.
  - (iv) If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be received at the office designated for receipt of proposals by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation, the time specified for receipt of proposals will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.
  - (v) Proposals may be withdrawn by written notice received at any time before award. Oral proposals in response to oral solicitations may be withdrawn orally. If the solicitation authorizes facsimile proposals, proposals may be withdrawn via facsimile received at any time before award, subject to the conditions specified in the provision at 52.215-5, Facsimile Proposals. Proposals may be withdrawn in person by an offeror or an authorized representative, if the identity of the person requesting withdrawal is established and the person signs a receipt for the proposal before award.
- (4) Unless otherwise specified in the solicitation, the offeror may propose to provide any item or combination of items.
  - (5) Offerors shall submit proposals in response to this solicitation in English, unless otherwise permitted by the solicitation, and in U.S. dollars, unless the provision at FAR 52.225-17, Evaluation of Foreign Currency Offers, is included in the solicitation.
  - (6) Offerors may submit modifications to their proposals at any time before the solicitation closing date and time, and may submit modifications in response to an amendment, or to correct a mistake at any time before award.
  - (7) Offerors may submit revised proposals only if requested or allowed by the Contracting Officer.
  - (8) Proposals may be withdrawn at any time before award. Withdrawals are effective upon receipt of notice by the Contracting Officer.
- (d) *Offer expiration date.* Proposals in response to this solicitation will be valid for the number of days specified on the solicitation cover sheet (unless a different period is proposed by the offeror).
  - (e) *Restriction on disclosure and use of data.* Offerors that include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall-
    - (1) Mark the title page with the following legend: This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed-in whole or in part-for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a

result of-or in connection with-the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [insert numbers or other identification of sheets]; and

- (2) Mark each sheet of data it wishes to restrict with the following legend: Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.

(f) *Contract award.*

- (1) The Government intends to award a contract or contracts resulting from this solicitation to the responsible offeror(s) whose proposal(s) represents the best value after evaluation in accordance with the factors and subfactors in the solicitation.
- (2) The Government may reject any or all proposals if such action is in the Government's interest.
- (3) The Government may waive informalities and minor irregularities in proposals received.
- (4) The Government intends to evaluate proposals and award a contract without discussions with offerors (except clarifications as described in FAR 15.306(a)). Therefore, the offeror's initial proposal should contain the offeror's best terms from a cost or price and technical standpoint. The Government reserves the right to conduct discussions if the Contracting Officer later determines them to be necessary. If the Contracting Officer determines that the number of proposals that would otherwise be in the competitive range exceeds the number at which an efficient competition can be conducted, the Contracting Officer may limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the most highly rated proposals.
- (5) The Government reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit cost or prices offered, unless the offeror specifies otherwise in the proposal.
- (6) The Government reserves the right to make multiple awards if, after considering the additional administrative costs, it is in the Government's best interest to do so.
- (7) Exchanges with offerors after receipt of a proposal do not constitute a rejection or counteroffer by the Government.
- (8) The Government may determine that a proposal is unacceptable if the prices proposed are materially unbalanced between line items or subline items. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more contract line items is significantly overstated or understated as indicated by the application of cost or price analysis techniques. A proposal may be rejected if the Contracting Officer determines that the lack of balance poses an unacceptable risk to the Government.
- (9) If a cost realism analysis is performed, cost realism may be considered by the source selection authority in evaluating performance or schedule risk.
- (10) A written award or acceptance of proposal mailed or otherwise furnished to the successful offeror within the time specified in the proposal shall result in a binding contract without further action by

either party.

- (11) If a post-award debriefing is given to requesting offerors, the Government shall disclose the following information, if applicable:
- (i) The agency's evaluation of the significant weak or deficient factors in the debriefed offeror's offer.
  - (ii) The overall evaluated cost or price and technical rating of the successful and the debriefed offeror and past performance information on the debriefed offeror.
  - (iii) The overall ranking of all offerors, when any ranking was developed by the agency during source selection.
  - (iv) A summary of the rationale for award.
  - (v) For acquisitions of commercial items, the make and model of the item to be delivered by the successful offeror.
  - (vi) Reasonable responses to relevant questions posed by the debriefed offeror as to whether source-selection procedures set forth in the solicitation, applicable regulations, and other applicable authorities were followed by the agency.
- (k) ORGANIZATIONAL CONFLICTS OF INTEREST (EPAAR 1552.209-71) (MAY 1994) ALTERNATE I (MAY 1994)
- (a) The Contractor warrants that, to the best of the Contractor's knowledge and belief, there are no relevant facts or circumstances which could give rise to an organizational conflict of interest, as defined in FAR Subpart 9.5, or that the Contractor has disclosed all such relevant information.
  - (b) Prior to commencement of any work, the Contractor agrees to notify the Contracting Officer immediately that, to the best of its knowledge and belief, no actual or potential conflict of interest exists or to identify to the Contracting Officer any actual or potential conflict of interest the firm may have. In emergency situations, however, work may begin but notification shall be made within five (5) working days.
  - (c) The Contractor agrees that if an actual or potential organizational conflict of interest is identified during performance, the Contractor will immediately make a full disclosure in writing to the Contracting Officer. This disclosure shall include a description of actions which the Contractor has taken or proposes to take, after consultation with the Contracting Officer, to avoid, mitigate, or neutralize the actual or potential conflict of interest. The Contractor shall continue performance until notified by the Contracting Officer of any contrary action to be taken.
  - (d) Remedies - EPA may terminate this contract for convenience, in whole or in part, if it deems such termination necessary to avoid an organizational conflict of interest. If the Contractor was aware of a potential organizational conflict of interest prior to award or discovered an actual or potential conflict after award and did not disclose it or misrepresented relevant information to the Contracting Officer, the Government may terminate the contract for default, debar the Contractor from Government contracting, or pursue such other remedies as may be permitted by law or this contract.

- (e) The Contractor agrees to insert in each subcontract or consultant agreement placed hereunder provisions which shall conform substantially to the language of this clause, including this paragraph, unless otherwise authorized by the Contracting Officer.

(l) DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUL 2013), FAR 52.204-6

- (a) Definition. “Data Universal Numbering System (DUNS) number”, as used in this provision, means the 9-digit number assigned by Dun and Bradstreet, Inc. (D&B) to identify unique business entities, which is used as the identification number for Federal Contractors.
- (b) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation “DUNS” or “DUNS+4” followed by the DUNS number or “DUNS+4” that identifies the offeror’s name and address exactly as stated in the offer. The DUNS number is a nine-digit number assigned by Dun and Bradstreet, Inc. The DUNS+4 is the DUNS number plus a 4- character suffix that may be assigned at the discretion of the offeror to establish additional System for Award Management records for identifying alternative Electronic Funds Transfer (EFT) accounts (see [Subpart 32.11](#)) for the same concern.
- (c) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one.

(1) An offeror may obtain a DUNS number—

- (i) Via the Internet at <https://www.dnb.com/duns/get-a-duns.html> or if the offeror does not have internet access, it may call Dun and Bradstreet at 1-866-705-5711 if located within the United States; or
- (ii) If located outside the United States, by contacting the local Dun and Bradstreet office. The offeror should indicate that it is an offeror for a U.S. Government contract when contacting the local Dun and Bradstreet office.

(2) The offeror should be prepared to provide the following information:

- (i) Company legal business name.
- (ii) Tradestyle, doing business, or other name by which your entity is commonly recognized.
- (iii) Company physical street address, city, state and ZIP Code.
- (iv) Company mailing address, city, state and ZIP Code (if separate from physical).
- (v) Company telephone number.
- (vi) Date the company was started.
- (vii) Number of employees at your location.
- (viii) Chief executive officer/key manager.
- (ix) Line of business (industry).
- (x) Company Headquarters name and address (reporting relationship within your entity.)

(li) SYSTEM FOR AWARD MANAGEMENT (FAR 52.204-7) (JUL 2013)

- (a) Definitions. As used in this provision—

“Data Universal Numbering System (DUNS) number” means the 9-digit number assigned by Dun and Bradstreet, Inc. (D&B) to identify unique business entities.



*“Data Universal Numbering System+4 (DUNS+4) number”* means the DUNS number assigned by D&B plus a 4-character suffix that may be assigned by a business concern. (D&B has no affiliation with this 4-character suffix.) This 4-character suffix may be assigned at the discretion of the business concern to establish additional System for Award Management records for identifying alternative Electronic Funds Transfer (EFT) accounts (see the FAR at Subpart 32.11) for the same concern.

*“Registered in the System for Award Management (SAM) database”* means that—

- (1) The Offeror has entered all mandatory information, including the DUNS number or the DUNS+4 number, the Contractor and Government Entity (CAGE) code, as well as data required by the Federal Funding Accountability and Transparency Act of 2006 (see Subpart 4.14), into the SAM database; and
  - (2) The offeror has completed the Core, Assertions, and Representations and Certification, and Points of contact sections of the registration in the SAM database;
  - (3) The Government has validated all mandatory data fields, to include validation of the Taxpayer Identification Number (TIN) with the Internal Revenue Service (IRS). The Offeror will be required to provide consent for TIN validation to the Government as a part of the SAM registration process.
  - (4) The Government has marked the record “Active”.
- (b)
- (1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee shall be registered in the SAM database prior to award, during performance, and through final payment of any contract, basic agreement, basic ordering agreement, or blanket purchasing agreement resulting from this solicitation.
  - (2) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation “DUNS” or “DUNS+4” followed by the DUNS or DUNS+4 number that identifies the offeror’s name and address exactly as stated in the offer. The DUNS number will be used by the Contracting Officer to verify that the offeror is registered in the SAM database.
- (c) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one.
- (1) An offeror may obtain a DUNS number—
    - (i) Via the internet at <https://www.dnb.com/duns/get-a-duns.html> or if the offeror does not have internet access, it may call Dun and Bradstreet at 1-866-705-5711 if located within the United States; or
    - (ii) If located outside the United States, by contacting the local Dun and Bradstreet office. The offeror should indicate that it is an offeror for a U.S. Government contract when contacting the local Dun and Bradstreet office.
  - (2) The offeror should be prepared to provide the following information:

- (i) Company legal business name.
  - (ii) Tradestyle, doing business, or other name by which your entity is commonly recognized.
  - (iii) Company physical street address, city, state and Zip Code.
  - (iv) Company mailing address, city, state and Zip Code (if separate from physical).
  - (v) Company telephone number.
  - (vi) Date the company was started.
  - (vii) Number of employees at your location.
  - (viii) Chief executive officer/key manager.
  - (ix) Line of business (industry).
  - (x) Company Headquarters name and address (reporting relationship within your entity).
- (d) If the Offeror does not become registered in the SAM database in the time prescribed by the Contracting Officer, the Contracting Officer will proceed to award to the next otherwise successful registered Offeror.
- (e) Processing time, which normally takes 48 hours, should be taken into consideration when registering. Offerors who are not registered should consider applying for registration immediately upon receipt of this solicitation.
- (f) Offerors may obtain information on registration at <https://www.acquisition.gov>.
- (n) SMALL BUSINESS PROGRAM REPRESENTATIONS (FAR 52.219-1) (Oct 2014)

(a) *Definitions.* As used in this provision—

“Economically disadvantaged women-owned small business (EDWOSB) concern” means a small business concern that is at least 51 percent directly and unconditionally owned by, and the management and daily business operations of which are controlled by, one or more women who are citizens of the United States and who are economically disadvantaged in accordance with 13 CFR part 127. It automatically qualifies as a women-owned small business concern eligible under the WOSB Program.

“Service-disabled veteran-owned small business concern”—

(1) Means a small business concern—

- (i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and
- (ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a service-disabled veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) “Service-disabled veteran” means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

“Small business concern” means a concern, including its affiliates that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and the size standard in paragraph (b) of this provision.

“Small disadvantaged business concern, consistent with 13 CFR 124.1002,” means a small business concern under the size standard applicable to the acquisition, that--

- (1) Is at least 51 percent unconditionally and directly owned (as defined at 13 CFR 124.105) by--
  - (i) One or more socially disadvantaged (as defined at 13 CFR 124.103) and economically disadvantaged (as defined at 13 CFR 124.104) individuals who are citizens of the United States, and
  - (ii) Each individual claiming economic disadvantage has a net worth not exceeding \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and
- (2) The management and daily business operations of which are controlled (as defined at 13 CFR 124.106) by individuals who meet the criteria in paragraphs (1)(i) and (ii) of this definition.

“Veteran-owned small business concern” means a small business concern--

- (1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and
- (2) The management and daily business operations of which are controlled by one or more veterans.

“Women-owned small business concern” means a small business concern--

- (1) That is at least 51 percent owned by one or more women; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and
- (2) Whose management and daily business operations are controlled by one or more women.

“Women-owned small business (WOSB) concern eligible under the WOSB Program (in accordance with 13 CFR part 127),” means a small business concern that is at least 51 percent directly and unconditionally owned by, and the management and daily business operations of which are controlled by, one or more women who are citizens of the United States.

(b)

- (1) The North American Industry Classification System (NAICS) code for this acquisition is 541712.
- (2) The small business size standard is 1000 employees.
- (3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(c) *Representations.*

- (1) The offeror represents as part of its offer that it  is,  is not a small business concern.
- (2) *[Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.]* The offeror represents that it  is,  is not, a small disadvantaged business concern as defined in 13 CFR 124.1002.

- (3) *[Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.]* The offeror represents as part of its offer that it  is,  is not a women-owned small business concern.
- (4) Women-owned small business (WOSB) concern eligible under the WOSB Program. *[Complete only if the offeror represented itself as a women-owned small business concern in paragraph (c)(3) of this provision.]* The offeror represents as part of its offer that—
- (i) It  is,  is not a WOSB concern eligible under the WOSB Program, has provided all the required documents to the WOSB Repository, and no change in circumstances or adverse decisions have been issued that affects its eligibility; and
  - (ii) It  is,  is not a joint venture that complies with the requirements of 13 CFR part 127, and the representation in paragraph (c)(4)(i) of this provision is accurate for each WOSB concern eligible under the WOSB Program participating in the joint venture. *[The offeror shall enter the name or names of the WOSB concern eligible under the WOSB Program and other small businesses that are participating in the joint venture: \_\_\_\_\_.]* Each WOSB concern eligible under the WOSB Program participating in the joint venture shall submit a separate signed copy of the WOSB representation.
- (5) Economically disadvantaged women-owned small business (EDWOSB) concern. *[Complete only if the offeror represented itself as a women-owned small business concern eligible under the WOSB Program in (c)(4) of this provision.]* The offeror represents as part of its offer that—
- (i) It  is,  is not an EDWOSB concern eligible under the WOSB Program, has provided all the required documents to the WOSB Repository, and no change in circumstances or adverse decisions have been issued that affects its eligibility; and
  - (ii) It  is,  is not a joint venture that complies with the requirements of 13 CFR part 127, and the representation in paragraph (c)(5)(i) of this provision is accurate for each EDWOSB concern participating in the joint venture. *[The offeror shall enter the name or names of the EDWOSB concern and other small businesses that are participating in the joint venture: \_\_\_\_\_.]* Each EDWOSB concern participating in the joint venture shall submit a separate signed copy of the EDWOSB representation.
- (6) *[Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.]* The offeror represents as part of its offer that it  is,  is not a veteran-owned small business concern.
- (7) *[Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (c)(6) of this provision.]* The offeror represents as part of its offer that it  is,  is not a service-disabled veteran-owned small business concern.
- (8) *[Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.]* The offeror represents, as part of its offer, that –
- (i) It  is,  is not 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 changes in ownership and control, principal office, or

HUBZone employee percentage have occurred since it was certified in accordance with 13 CFR part 126; and

- (ii) It [ ] is, [ ] is not a HUBZone joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (c)(8)(i) of this provision is accurate for each HUBZone small business concern participating in the HUBZone joint venture. [*The offeror shall enter the names of each of the HUBZone small business concerns participating in the HUBZone joint venture: \_\_\_\_\_.*] Each HUBZone small business concern participating in the HUBZone joint venture shall submit a separate signed copy of the HUBZone representation.

(d) *Notice.*

- (1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.
- (2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a business concern that is small, HUBZone small, small disadvantaged, service-disabled veteran-owned small, economically disadvantaged women-owned small, or women-owned small eligible under the WOSB Program in order to obtain a contract to be awarded under the preference programs established pursuant to section 8, 9, 15, 31, and 36 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall

—

- (i) Be punished by imposition of fine, imprisonment, or both;
- (ii) Be subject to administrative remedies, including suspension and debarment; and
- (iii) Be ineligible for participation in programs conducted under the authority of the Act.

(o) PAYMENT BY ELECTRONIC FUNDS TRANSFER- SYSTEM FOR AWARD MANAGEMENT (FAR 52.232-33) (JUL 2013)

(a) *Method of payment.*

- (1) All payments by the Government under this contract, shall be made by electronic funds transfer (EFT), except as provided in paragraph (a)(2) of this clause. As used in this clause, the term "EFT" refers to the funds transfer and may also include the payment information transfer.
- (2) In the event the Government is unable to release one or more payments by EFT, the Contractor agrees to either—
  - (i) Accept payment by check or some other mutually agreeable method of payment; or
  - (ii) Request the Government to extend the payment due date until such time as the Government can make payment by EFT (but see paragraph (d) of this clause).

- (b) *Contractor's EFT information.* The Government shall make payment to the Contractor using the EFT information contained in the System for Award Management (SAM) database. In the event that the

EFT information changes, the Contractor shall be responsible for providing the updated information to the SAM database.

- (c) *Mechanisms for EFT payment.* The Government may make payment by EFT through either the Automated Clearing House (ACH) network, subject to the rules of the National Automated Clearing House Association, or the Fedwire Transfer System. The rules governing Federal payments through the ACH are contained in 31 CFR part 210.
- (d) *Suspension of payment.* If the Contractor's EFT information in the SAM database is incorrect, then the Government need not make payment to the Contractor under this contract until correct EFT information is entered into the SAM database; and any invoice or contract financing request shall be deemed not to be a proper invoice for the purpose of prompt payment under this contract. The prompt payment terms of the contract regarding notice of an improper invoice and delays in accrual of interest penalties apply.
- (e) *Liability for uncompleted or erroneous transfers.*
  - (1) If an uncompleted or erroneous transfer occurs because the Government used the Contractor's EFT information incorrectly, the Government remains responsible for—
    - (i) Making a correct payment;
    - (ii) Paying any prompt payment penalty due; and
    - (iii) Recovering any erroneously directed funds.
  - (2) If an uncompleted or erroneous transfer occurs because the Contractor's EFT information was incorrect, or was revised within 30 days of Government release of the EFT payment transaction instruction to the Federal Reserve System, and—
    - (i) If the funds are no longer under the control of the payment office, the Government is deemed to have made payment and the Contractor is responsible for recovery of any erroneously directed funds; or
    - (ii) If the funds remain under the control of the payment office, the Government shall not make payment, and the provisions of paragraph (d) of this clause shall apply.
- (f) *EFT and prompt payment.* A payment shall be deemed to have been made in a timely manner in accordance with the prompt payment terms of this contract if, in the EFT payment transaction instruction released to the Federal Reserve System, the date specified for settlement of the payment is on or before the prompt payment due date, provided the specified payment date is a valid date under the rules of the Federal Reserve System.
- (g) *EFT and assignment of claims.* If the Contractor assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the Contractor shall require as a condition of any such assignment, that the assignee shall register separately in the SAM database and shall be paid by EFT in accordance with the terms of this clause. Notwithstanding any other requirement of this contract, payment to an ultimate recipient other than the Contractor, or a financial institution properly recognized under an assignment of claims pursuant to Subpart 32.8, is not permitted. In all respects, the requirements of this clause shall apply to the assignee as if it were the Contractor. EFT information that shows the ultimate recipient of the transfer to be other than the Contractor, in the absence of a proper assignment of claims acceptable to the Government, is incorrect EFT information within the meaning

of paragraph (d) of this clause.

- (h) *Liability for change of EFT information by financial agent.* The Government is not liable for errors resulting from changes to EFT information made by the Contractor's financial agent.
- (i) *Payment information.* The payment or disbursing office shall forward to the Contractor available payment information that is suitable for transmission as of the date of release of the EFT instruction to the Federal Reserve System. The Government may request the Contractor to designate a desired format and method(s) for delivery of payment information from a list of formats and methods the payment office is capable of executing. However, the Government does not guarantee that any particular format or method of delivery is available at any particular payment office and retains the latitude to use the format and delivery method most convenient to the Government. If the Government makes payment by check in accordance with paragraph (a) of this clause, the Government shall mail the payment information to the remittance address contained in the SAM database.
- (p) **PROTEST AFTER AWARD FAR 52.233-3 (AUG 1996)**
  - (a) Upon receipt of a notice of protest (as defined in 33.101 of the FAR) the Contracting Officer may, by written order to the Contractor, direct the Contractor to stop performance of the work called for by this contract. The order shall be specifically identified as a stop-work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Upon receipt of the final decision in the protest, the Contracting Officer shall either—
    - (1) Cancel the stop-work order; or
    - (2) Terminate the work covered by the order as provided in the Default, or the Termination for Convenience of the Government, clause of this contract.
  - (b) If a stop-work order issued under this clause is canceled either before or after a final decision in the protest, the Contractor shall resume work. The Contracting Officer shall make an equitable adjustment in the delivery schedule or contract price, or both, and the contract shall be modified, in writing, accordingly, if—
    - (1) The stop-work order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this contract; and
    - (2) The Contractor asserts its right to an adjustment within 30 days after the end of the period of work stoppage; provided, that if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon a proposal submitted at any time before final payment under this contract.
  - (c) If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of the Government, the Contracting Officer shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.
  - (d) If a stop-work order is not canceled and the work covered by the order is terminated for default, the Contracting Officer shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

- (e) The Government's rights to terminate this contract at any time are not affected by action taken under this clause.
- (f) If, as the result of the Contractor's intentional or negligent misstatement, misrepresentation, or miscertification, a protest related to this contract is sustained, and the Government pays costs, as provided in FAR 33.102(b)(2) or 33.104(h)(1), the Government may require the Contractor to reimburse the Government the amount of such costs. In addition to any other remedy available, and pursuant to the requirements of Subpart 32.6, the Government may collect this debt by offsetting the amount against any payment due the Contractor under any contract between the Contractor and the Government.

(q) TEMPORARY CLOSURE OF EPA FACILITIES (EPA-H-42-103) (Local Clause)

(a)

- (1) The Environmental Protection Agency observes the following days as federal holidays. The term "Federal holidays" as used in this clause shall mean only the following enumerated days and any other days hereafter declared National holidays by the President of the United States. Holidays falling on a Sunday will be observed on the following Monday. Holidays falling on a Saturday will be observed on the preceding Friday.

January 1 ..... New Year's Day  
 January ..... Third Monday - Martin Luther King Day  
 February ..... Third Monday - Washington's Birthday  
 May..... Last Monday - Memorial Day  
 July 4 ..... Independence Day  
 September..... First Monday - Labor Day  
 October ..... Second Monday - Columbus Day  
 November 11 ... Veterans Day  
 November ..... Fourth Thursday - Thanksgiving Day  
 December 25.... Christmas Day

- (2) Holiday observances of such days by Government personnel shall not be cause for additional period of performance or entitlement to compensation except as set forth in the contract. If the Contractor's personnel work on a holiday, no form of holiday or other premium compensation will be reimbursed either as a direct or indirect cost, unless authorized pursuant to an overtime clause elsewhere in the contract.

(b)

- (1) EPA may close an EPA facility for all or a portion of a business day as a result of:
  - (i) Granting administrative leave to non-essential EPA employees (e.g., unanticipated holiday);
  - (ii) Inclement weather;
  - (iii) Failure of Congress to appropriate operational funds;
  - (iv) Any other day designated by Federal law, Executive Order or Presidential Proclamation; or
  - (v) Other reason as determined by the EPA (e.g., designated furlough day for federal workers).
- (2) In such cases, Contractor personnel not determined by the Contracting Officer to be excepted (e.g., not performing mission-critical round-the-clock services/tasks) who are not already on duty at the



facility shall not report to the facility. Such Contractor personnel already present shall be dismissed and shall leave the facility.

- (3) The Contractor agrees to continue to provide sufficient personnel to perform round-the-clock requirements of mission-critical services/tasks already in operation or scheduled for performance during the period in which EPA employees are dismissed, and shall be guided by any specific instructions of the Contracting Officer or his/her duly authorized representative. In formulating instructions the Contracting Officer or authorized representative may consider recommendations from regional/local EPA facilities management/operations staff.
- (c) When Contractor personnel services are not required or provided due to closure of an EPA facility as described in paragraph (b), the contract price will be adjusted as follows:
- (1) For fixed-price contracts, deductions in the Contractor's price will be computed as appropriate for the particular firm fixed price contract in question, e.g.,
    - (i) The deduction rate in dollars per day will be equal to the per-month contract price divided by 21 days per month. (In this example, the 21-days-per-month figure was calculated as follows:  
$$365 \text{ calendar days/year} - 10 \text{ Federal holidays} - 104 \text{ Saturdays/Sundays} = 251 \text{ days/12 months} = 20.92 \text{ days/month, rounded up to 21 days/month}$$
    - (ii) The deduction rate in dollars per day will be multiplied by the number of days services are not required or provided. If services are provided for portions of days, appropriate adjustment will be made by the Contracting Officer to ensure that the Contractor is compensated for services provided.
  - (2) For cost-reimbursement, time-and-materials and labor-hour type contracts, EPA shall not reimburse, as direct costs, salaries or wages of Contractor personnel for the period during which such personnel are dismissed from, or do not have access to, the facility.
- (d) The Contractor shall place identical requirements, including this paragraph, in all subcontracts that require performance of work on-site unless otherwise instructed by the Contracting Officer.
- (r) Principal Investigator (PI) Substitution due to Death, Resignation or Illness (AUG 2013) (Custom Clause)

The SBIR solicitation, evaluation, and award process is an elaborate chain of events involving hundreds of proposals and multiple offices within EPA. It entails the coordination of external peer review panels, the evaluation of proposals, and the ultimate determination of eligibility for award. Consequently, this process can be quite time consuming and delays may be encountered. Accordingly, every effort should be made by an offeror to retain the Principal Investigator (PI) initially identified in its proposal. When circumstances occur beyond an offeror's control, such as death, illness, or resignation of a PI, the offeror shall provide acceptable documentation that could include a letter of resignation, copy of an obituary, or a signed statement by the PI that s/he is unable to perform based on medical reasons, etc. An offeror, upon notification that its proposal is being considered for award, will be required to agree to the alternate evaluation of the substitute PI, and will have an opportunity to submit a timely resume for a qualified substitute PI. Note, however, that the evaluation of a substitute PI will not improve an offeror's rating, and could actually result in an offeror's failure to receive an award based on inadequate substitute PI qualifications.

- (s) UTILIZATION OF FEDCONNECT FOR CONTRACT ADMINISTRATION (MAR 2013) (EPA-H-42-102) (Local Clause)

EPA will utilize the FedConnect® web portal in administering this contract. The contractor must be registered in FedConnect® and have access to the FedConnect website located at <https://www.fedconnect.net/Fedconnect/>. For assistance in registering or for other FedConnect® technical questions please call the FedConnect® Help Desk at (800) 899-6665 or email at [support@fedconnect.net](mailto:support@fedconnect.net)

- (t) TECHNICAL QUESTIONS (EPA-L-15-102) (Local Clause)

Offerors must submit all technical questions concerning this solicitation electronically through FedConnect. In order to submit questions, offerors must register in FedConnect at [www.fedconnect.net](http://www.fedconnect.net), see main page for registration instructions. For assistance in registering or for other FedConnect technical questions please call the FedConnect Help Desk at (800) 899-6665 or email at [support@fedconnect.net](mailto:support@fedconnect.net). Only those technical questions posted through FedConnect will be accepted. EPA must receive technical questions no later than 12:00 p.m. (noon) Eastern Standard Time (EST) on **September 20, 2016**. EPA will utilize FedConnect to issue amendments to the solicitation (e.g., to answer technical questions which may affect proposal submittal). EPA will not reference the source of the questions.

## VII. SUBMISSION OF PROPOSALS

Your proposal (including all appendices) **shall be submitted in Portable Document Format (PDF), and shall be received via FedConnect by 12:00 p.m. (noon) Eastern Standard Time (EST) on October 20, 2016.** Your **entire proposal (including appendices)** shall be submitted through FedConnect as **ONE document in PDF**. Only proposals received via FedConnect as ONE PDF by the deadline identified above will be considered for award.

**Proposals shall be submitted via the FedConnect web portal ([www.fedconnect.net](http://www.fedconnect.net)). In order to submit proposals, offerors must register in FedConnect at [www.fedconnect.net](http://www.fedconnect.net), see main page of FedConnect website for registration instructions. For assistance in registering or for other FedConnect technical questions please call the FedConnect Help Desk at (800) 899-6665 or email at [support@fedconnect.net](mailto:support@fedconnect.net).**

**IMPORTANT: Please note Section VI., Paragraph J.j, Federal Acquisition Regulation Clause 52.215(c)(3), “Instructions to Offerors – Competitive Acquisitions” concerning Late Proposals, Modification of Proposals and Withdrawal of Proposals.**

**It is the responsibility of Offerors to submit proposals in FedConnect with sufficient time to ensure they are received by the date and time specified. Only proposals received by the date and time specified via FedConnect will be considered for award.**

## VIII. SCIENTIFIC AND TECHNICAL INFORMATION SOURCES

The following documents are referenced in Section D. 2015 SBIR Phase I Research Topics. The purpose of the documents is to provide more information on some of the specific topics. All but one of the sources are EPA websites or publications, and they provide more detail on EPA regulations and technology approaches related to the proposed research areas. One website references a link outside of EPA that describes cookstove research.

All references are listed below by topic.

## Air and Climate

- Formaldehyde:
  - <https://www.epa.gov/formaldehyde/facts-about-formaldehyde>
  - <http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=219&tid=39>
  - <http://www.cancer.gov/about-cancer/causes-prevention/risk/substances/formaldehyde/formaldehyde-fact-sheet>)
- Methane
  - <https://www3.epa.gov/climatechange/ghgemissions/gases/ch4.html>
  - [https://www3.epa.gov/climatechange/Downloads/EPAactivities/Non\\_CO2\\_US\\_Summary\\_Report\\_SinglePg.pdf](https://www3.epa.gov/climatechange/Downloads/EPAactivities/Non_CO2_US_Summary_Report_SinglePg.pdf)
  - <https://www.epa.gov/gmi>
- Toxic Chemicals
  - <https://www.epa.gov/pCBS>
  - <http://ehp.niehs.nih.gov/121-a86/>
  - <https://www.epa.gov/chemical-research>
  - <https://www.epa.gov/saferchoice>
- Water
  - Blueprint for Integrating Technology Innovation into the National Water Program: <http://www2.epa.gov/sites/production/files/2014-04/documents/blueprintv1.pdf>
  - Promoting Technology Innovation for Clean and Safe Water: Water Technology Innovation Blueprint—Version 2: [http://www2.epa.gov/sites/production/files/2014-04/documents/clean\\_water\\_blueprint\\_final.pdf](http://www2.epa.gov/sites/production/files/2014-04/documents/clean_water_blueprint_final.pdf)
  - <https://www.epa.gov/lead>
  - <https://www.epa.gov/your-drinking-water/table-regulated-drinking-water-contaminants>

## IX. SUBMISSION FORMS AND CERTIFICATIONS

The attached forms (listed below) should be completed as indicated under Section IV, Proposal Preparation Instructions and Requirements. Include Appendix 1 as the first page of your proposal and Appendix 2 as the second page of your proposal.

- Appendix 1: Proposal Cover Sheet (Number as Page 1)
- Appendix 2: Project Summary (Number as Page 2)
- Appendix 3: SBIR Proposal Summary Budget
- Appendix 4: Representations and Certifications
- Appendix 5: Frequently Asked Questions (FAQ's)
- Appendix 6: Commercialization History

**APPENDIX 1**

**U.S. ENVIRONMENTAL PROTECTION AGENCY  
 SMALL BUSINESS INNOVATION RESEARCH PROGRAM  
 SBIR PHASE I SOLICITATION NO. SOL-NC-16-00038  
 PROPOSAL COVER SHEET**

\_\_\_\_\_  
 Proposal Title

\_\_\_\_\_  
 Company Name

\_\_\_\_\_  
 Street Address

_____ City	_____ State	_____ ZIP+4	
_____ \$ Amount Requested (Not to exceed \$100,000)	_____ Website	_____ 6 Months Proposed Duration (Phase I)	_____ No. of Employees

\*\*\*\*\*Proposals submitted in response to this solicitation will be valid for 300 days\*\*\*\*\*

**Research Topic Code and Topic Title (select only one)**

- 1A: Inexpensive Indoor Formaldehyde Sensor
- 1B: Low-Cost Sensor for Identifying Fugitive Methane Emissions
- 2A: Greener Manufacturing of Plastics
- 2B: Greener Plastic Materials and Products
- 3A: Cleaner Manufacturing Processes for Dyes, Paints, and Inks
- 3B: Novel Technologies to Help Consumers Understand the Chemical Composition of Consumer Products
- 4A: Non-Reverse Osmosis Based Desalination Units for Small Communities
- 4B: Non-Toxic Coatings for Water Pipes that Prevent the Growth of Biofilms, Corrosion, Scaling, and Leaching of Lead
- 4C: Simple Lead Test for Tap Water in Homes
- 5A: Water Pipes that Prevent the Growth of Biofilms, Prevent Corrosion and Scaling, and Do Not Contain Lead
- 6A: Non-Toxic Interior Construction Materials for Homes
- 6B: Greener Exterior Construction Materials

**Certification and Authorizations (Check Y (Yes) or N (No))**

- Y  N The above concern certifies that it is a small business concern and meets the definition as stated in the program solicitation.
- Y  N The above concern certifies that a minimum of 2/3 of the research and/or analytical effort will be performed by the proposing firm.
- Y  N The above concern certifies that it is a woman owned small business concern and meets the definition as stated in the solicitation.\*
- Y  N The above concern certifies that it is a socially and economically disadvantaged small business concern and meets the definition as stated in the solicitation.\*
- Y  N The above concern certifies that the principal investigator is a woman and meets the definition as stated in the solicitation.\*
- Y  N The above concern certifies that is a socially and economically disadvantaged individual and meets the definition as stated in the solicitation.\*
- Y  N The above concern certifies it is a HUBZone small business concern and meets the definition as stated in the solicitation.\*

\*For Statistical Purposes only.

If the proposal does not result in an award, is the Government permitted to disclose the title and technical project summary of your proposed project, and the name, address, and telephone number of the official of the proposing firm to any inquiring parties?

- Yes  No

Do you plan to send, or have you sent this proposal or a similar one to any other federal agency?  Yes  No

\_\_\_\_\_  
If yes, which? Use acronym(s) for each agency, (e.g., DOD, NIH, DOE, NASA, etc.)

Choose one of the following to describe your organization type:

- Individual       Partnership       Corporation       LLC

Please provide the following information:

\_\_\_\_\_  
Tax Identification Number

\_\_\_\_\_  
Dun & Bradstreet Number

\_\_\_\_\_  
Small Business Concern  
(SBC) Control ID

The Offeror is in full agreement with the terms, conditions and provisions included in this solicitation, as evidenced by signatures below.

**Contact Information**

Principal Investigator

Business Representative

\_\_\_\_\_  
First Name      MI      Last Name

\_\_\_\_\_  
First Name      MI      Last Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

\_\_\_\_\_  
Telephone

\_\_\_\_\_  
Telephone

\_\_\_\_\_  
Email Address

\_\_\_\_\_  
Email Address

\_\_\_\_\_  
Signature      Date

\_\_\_\_\_  
Signature      Date

**Proprietary Notice**

This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed—in whole or in part—for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of—or in connection with—the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained on pages \_\_\_\_\_; of this proposal.

APPENDIX 2

U.S. ENVIRONMENTAL PROTECTION AGENCY  
SMALL BUSINESS INNOVATION RESEARCH PROGRAM  
SBIR PHASE I SOLICITATION NO. SOL-NC-16-00038  
PROJECT SUMMARY

---

Company Name

---

Street Address

---

City

State

ZIP+4

---

Proposal Title

---

Research Topic Code and Topic Title

---

Principal Investigator

Telephone

Email Address

**Project Summary**

**The project summary (shall be limited to one page and not to exceed 200 words; must be publishable, i.e., not proprietary) should address the following:** The specific need for the technology, what the technology would do to meet that need, technical feasibility, application(s), end users, evidence of willing buyers, size of the potential market, performance compared to current technologies and potential for environmental benefits.

### INSTRUCTIONS FOR APPENDIX 3

The purpose of this form is to provide a vehicle whereby the offeror submits to the Government a pricing proposal of estimated costs with detailed information for each cost element, consistent with the offeror's cost accounting system.

If the completed summary is not self-explanatory and/or does not fully document and justify the amounts requested in each category, such documentation should be contained, as appropriate, on a budget explanation page immediately following the budget in the proposal.

- A. Direct Labor – List individually all personnel included, the estimated hours to be expended and the rates of pay (salary, wages, and fringe benefits).
- B. Overhead - Specify current rate(s) and base(s). Use current rate(s) negotiated with the cognizant federal negotiating agency, if available. If no rate(s) has (have) been negotiated, a reasonable rate(s) may be requested for Phase I which will be subject to approval by EPA. Offerors may use whatever number and types of overhead rates that are in accordance with their accounting systems and approved by the cognizant federal negotiating agency, if available.
- C. Other Direct Costs - List all other direct costs which are not otherwise included in the categories described above, i.e., computer services, publication costs, subcontracts, etc. List each item of permanent equipment to be purchased, its price, and explain its relation to the project.
- D. Travel - Address the type and extent of travel and its relation to the project. Include travel expenses for a one-day SBIR Phase I Kick-Off Meeting in Washington, DC.
- E. Consultants - Indicate name, daily compensation, and estimated days of service.
- F. General and Administrative (G&A) - Same as B. Above.
- G. Profit - Reasonable fee (estimated profit) will be considered under this solicitation. For guidance purposes, the amount of profit should not exceed 10% of total project costs.

**Total Project Price (Total Costs + Profit)** – The total costs proposed on Appendix 3 **must** match the total costs requested on Appendix 1.

*If the proposed budget exceeds the maximum amount, or the amount requested in Appendix 3, a detailed explanation of funding source(s) for the additional proposed costs must be provided. Additionally, a proposal that submits a budget that exceeds the maximum amount or the amount requested must affirmatively state they the offeror understands that no award will exceed the maximum amount or the amount requested. Offerors are further advised that if the proposed budget is less than the maximum award or the amount requested, an award would provide only the budgeted amount. The failure to explain additional cost proposed and/or acknowledgment that the offeror understands no award will exceed the maximum will result in the rejection of the offer.*

**Appendix 3**  
**SBIR PROPOSAL SUMMARY BUDGET**  
(See Instructions on Page 55)

A. DIRECT LABOR (PI and other staff, list separately) Hours times Est. Rate:	\$
B. OVERHEAD	\$
C. OTHER DIRECT COSTS: (list separately)	\$
D. TRAVEL: List purpose and individuals and or title	\$
E. CONSULTANTS: (List daily compensation and est. days of service)	\$
F. GENERAL AND ADMINISTRATIVE:	\$
<b>TOTAL COSTS (Total of A thru F above)</b>	<b>\$</b>
G. PROFIT (_____%) Not to exceed 10% of total project costs	\$
<b>TOTAL PROJECT PRICE (Total costs + Profit)</b>	<b>\$</b>
(Total costs proposed must match the total costs requested on Appendix 1)	

\_\_\_\_\_  
PRINT NAME:

\_\_\_\_\_  
TITLE:

\_\_\_\_\_  
SIGNATURE:

\_\_\_\_\_  
DATE SUBMITTED:

This proposal is submitted in response to EPA SBIR Program Solicitation No. SOL-NC-16-00038 reflects our best estimate as of this date.



## Appendix 4

### REPRESENTATIONS AND CERTIFICATIONS

#### K.1 ANNUAL REPRESENTATIONS AND CERTIFICATIONS (FAR) (52.204-8) (APR 2016).

- (a)
- (1) The North American Industry Classification System (NAICS) code for this acquisition is 541712.
  - (2) The small business size standard is 1000 employees.
  - (3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.
- (b)
- (1) If the provision at 52.204-7, System for Award Management, is included in this solicitation, paragraph (d) of this provision applies.
  - (2) If the provision at 52.204-7 is not included in this solicitation, and the offeror is currently registered in the System for Award Management (SAM), and has completed the Representations and Certifications section of SAM electronically, the offeror may choose to use paragraph (d) of this provision instead of completing the corresponding individual representations and certifications in the solicitation. The offeror shall indicate which option applies by checking one of the following boxes:
    - (i)  Paragraph (d) applies.
    - (ii)  Paragraph (d) does not apply and the offeror has completed the individual representations and certifications in the solicitation.
- (c)
- (1) The following representations or certifications in SAM are applicable to this solicitation as indicated:
    - (i) 52.203-2, Certificate of Independent Price Determination. This provision applies to solicitations when a firm-fixed-price contract or fixed-price contract with economic price adjustment is contemplated, unless—
      - (A) The acquisition is to be made under the simplified acquisition procedures in Part 13;
      - (B) The solicitation is a request for technical proposals under two-step sealed bidding procedures; or
      - (C) The solicitation is for utility services for which rates are set by law or regulation.
    - (ii) 52.203-11, Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions. This provision applies to solicitations expected to exceed \$150,000.
    - (iii) 52.204-3, Taxpayer Identification. This provision applies to solicitations that do not include the provision at 52.204-7, System for Award Management.
    - (iv) 52.204-5, Women-Owned Business (Other Than Small Business). This provision applies to solicitations that—
      - (A) Are not set aside for small business concerns;
      - (B) Exceed the simplified acquisition threshold; and
      - (C) Are for contracts that will be performed in the United States or its outlying areas.
    - (v) 52.209-2, Prohibition on Contracting with Inverted Domestic Corporations—

Representation.

- (vi) [52.209-5](#), Certification Regarding Responsibility Matters. This provision applies to solicitations where the contract value is expected to exceed the simplified acquisition threshold.
- (vii) [52.209-11](#), Representation by Corporations Regarding Delinquent Tax Liability or a Felony Conviction under any Federal Law. This provision applies to all solicitations.
- (viii) [52.214-14](#), Place of Performance—Sealed Bidding. This provision applies to invitations for bids except those in which the place of performance is specified by the Government.
- (ix) [52.215-6](#), Place of Performance. This provision applies to solicitations unless the place of performance is specified by the Government.
- (x) [52.219-1](#), Small Business Program Representations (Basic & Alternate I). This provision applies to solicitations when the contract will be performed in the United States or its outlying areas.
  - (A) The basic provision applies when the solicitations are issued by other than DoD, NASA, and the Coast Guard.
  - (B) The provision with its Alternate I applies to solicitations issued by DoD, NASA, or the Coast Guard.
- (xi) [52.219-2](#), Equal Low Bids. This provision applies to solicitations when contracting by sealed bidding and the contract will be performed in the United States or its outlying areas.
- (xii) [52.222-22](#), Previous Contracts and Compliance Reports. This provision applies to solicitations that include the clause at [52.222-26](#), Equal Opportunity.
- (xiii) [52.222-25](#), Affirmative Action Compliance. This provision applies to solicitations, other than those for construction, when the solicitation includes the clause at [52.222-26](#), Equal Opportunity.
- (xiv) [52.222-38](#), Compliance with Veterans' Employment Reporting Requirements. This provision applies to solicitations when it is anticipated the contract award will exceed the simplified acquisition threshold and the contract is not for acquisition of commercial items.
- (xv) [52.223-1](#), Biobased Product Certification. This provision applies to solicitations that require the delivery or specify the use of USDA–designated items; or include the clause at [52.223-2](#), Affirmative Procurement of Biobased Products Under Service and Construction Contracts.
- (xvi) [52.223-4](#), Recovered Material Certification. This provision applies to solicitations that are for, or specify the use of, EPA–designated items.
- (xvii) [52.225-2](#), Buy American Certificate. This provision applies to solicitations containing the clause at [52.225-1](#).
- (xviii) [52.225-4](#), Buy American—Free Trade Agreements—Israeli Trade Act Certificate. (Basic, Alternates I, II, and III.) This provision applies to solicitations containing the clause at [52.225-3](#).
  - (A) If the acquisition value is less than \$25,000, the basic provision applies.
  - (B) If the acquisition value is \$25,000 or more but is less than \$50,000, the provision with its Alternate I applies.
  - (C) If the acquisition value is \$50,000 or more but is less than \$77,533, the provision with its Alternate II applies.
  - (D) If the acquisition value is \$77,533 or more but is less than \$100,000, the provision with

its Alternate III applies.

- (xix) [52.225-6](#), Trade Agreements Certificate. This provision applies to solicitations containing the clause at [52.225-5](#).
  - (xx) [52.225-20](#), Prohibition on Conducting Restricted Business Operations in Sudan— Certification. This provision applies to all solicitations.
  - (xxi) [52.225-25](#), Prohibition on Contracting with Entities Engaging in Certain Activities or Transactions Relating to Iran-Representation and Certifications. This provision applies to all solicitations.
  - (xxii) [52.226-2](#), Historically Black College or University and Minority Institution Representation. This provision applies to solicitations for research, studies, supplies, or services of the type normally acquired from higher educational institutions.
- (2) The following representations or certifications are applicable as indicated by the Contracting Officer:
- [Contracting Officer check as appropriate.]
- (i) \_\_\_ [52.204-17](#), Ownership or Control of Offeror.
  - (ii) \_\_\_ [52.204-20](#), Predecessor of Offeror.
  - (iii) \_\_\_ [52.222-18](#), Certification Regarding Knowledge of Child Labor for Listed End Products.
  - (iv) \_\_\_ [52.222-48](#), Exemption from Application of the Service Contract Labor Standards to Contracts for Maintenance, Calibration, or Repair of Certain Equipment- Certification.
  - (v) \_\_\_ [52.222-52](#), Exemption from Application of the Service Contract Labor Standards to Contracts for Certain Services-Certification.
  - (vi) \_\_\_ [52.223-9](#), with its Alternate I, Estimate of Percentage of Recovered Material Content for EPA-Designated Products (Alternate I only).
  - (vii) \_\_\_ [52.227-6](#), Royalty Information.
    - (A) \_\_\_ Basic.
    - (B) \_\_\_ Alternate I.
  - (viii) \_\_\_ [52.227-15](#), Representation of Limited Rights Data and Restricted Computer Software.
- (d) The offeror has completed the annual representations and certifications electronically via the SAM website accessed through <https://www.acquisition.gov>. After reviewing the SAM database information, the offeror verifies by submission of the offer that the representations and certifications currently posted electronically that apply to this solicitation as indicated in paragraph (c) of this provision have been entered or updated within the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer and are incorporated in this offer by reference (see FAR [4.1201](#)); except for the changes identified below [offeror to insert changes, identifying change by clause number, title, date]. These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

FAR	CLAUSE	#	TITLE	DATE	CHANGE

Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted on SAM.

**K.2 REPRESENTATION BY CORPORATIONS REGARDING DELINQUENT TAX LIABILITY OR A FELONY CONVICTION UNDER ANY FEDERAL LAW. (FAR 52.209-11) (FEB 2016)**

- (a) As required by sections 744 and 745 of Division E of the Consolidated and Further Continuing Appropriations Act, 2015 (Pub. L. 113-235), and similar provisions, if contained in subsequent appropriations acts, the Government will not enter into a contract with any corporation that—
  - (1) Has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability, where the awarding agency is aware of the unpaid tax liability, unless an agency has considered suspension or debarment of the corporation and made a determination that suspension or debarment is not necessary to protect the interests of the Government; or
  - (2) Was convicted of a felony criminal violation under any Federal law within the preceding 24 months, where the awarding agency is aware of the conviction, unless an agency has considered suspension or debarment of the corporation and made a determination that this action is not necessary to protect the interests of the Government.
- (b) The Offeror represents that—
  - (1) It is  is not  a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability; and
  - (2) It is  is not  a corporation that was convicted of a felony criminal violation under a Federal law within the preceding 24 months.

**K.3 ORGANIZATIONAL CONFLICT OF INTEREST CERTIFICATION (EPAAR 1552.209-72) (APR 1984)**

The offeror [ ] is [ ] is not aware of any information bearing on the existence of any potential organizational conflict of interest. If the offeror is aware of information bearing on whether a potential conflict may exist, the offeror shall provide a disclosure statement describing this information.

**K.4 SOCIAL SECURITY NUMBERS OF CONSULTANTS AND CERTAIN SOLE PROPRIETORS AND PRIVACY ACT STATEMENT (EPAAR 1552.224-70) (APR 1984)**

- (a) Section 6041 of Title 26 of the U.S. Code requires EPA to file Internal Revenue Service (IRS) Form 1099 with respect to individuals who receive payments from EPA under purchase orders or contracts. Section 6109 of Title 26 of the U.S. Code authorizes collection by EPA of the social security numbers of such individuals for the purpose of filing IRS Form 1099. Social security numbers obtained for this purpose will be used by EPA for the sole purpose of filing IRS Form 1099 in compliance with Section 6041 of Title 26 of the U.S. Code.
- (b) If the offeror or quoter is an individual, consultant, or sole proprietor and has no Employer Identification Number, insert the offeror's or quoter's social security number on the following line.

**K.5 SIGNATURE BLOCK**

I hereby certify that the responses to the above Representations, Certifications and other statements are accurate and complete.

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**K.6 CONGRESSIONAL DISTRICT/DUN AND BRADSTREET NUMBER**

A. Congressional district for offeror's place of business: \_\_\_\_\_

Congressional district for offeror's place(s) of performance: \_\_\_\_\_

B. Dun and Bradstreet Number: \_\_\_\_\_

C. Tax Identification Number: \_\_\_\_\_

**K.7 CERTIFICATION (PRIOR TO AWARD)**

Submission of this certification is required prior to contract award:

*The contractor certifies that:*

- (1) the principal investigator and the small business firm have not accepted funding for the same or overlapping work except as stated in the underlying proposal;*
- (2) all proposals describing the same or overlapping work have been withdrawn from other agencies;*
- (3) the primary employment of the principal investigator is with this firm at the time of the award and will continue during the conduct of the research;*
- (4) the offeror is a small business as defined in the EPA SBIR Solicitation under which the offeror submitted its proposal, and the principal investigator is an employee of the firm and is currently available to perform the proposed work; and*
- (5) the undersigned understands that willfully making a false statement to or concealing a material fact from EPA is a criminal offense (U.S. Code, title 18, Section 1001).*

Authorized Company Officer:

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Principal Investigator:

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**K.8 CERTIFICATION (FINAL REPORT)**

Submission of this certification is required with the final report:

*I certify that the Principal Investigator currently is\_\_\_, is not\_\_\_ “primarily employed” by the firm as defined in the SBIR solicitation.*

*I certify that the work under this project has\_\_\_, has not\_\_\_, been submitted for funding to another Federal agency and that it has\_\_\_, has not\_\_\_ been funded under any other Federal grant, contract, or subcontract.*

*I certify that to the best of my knowledge the work for which payment is hereby requested was performed in accordance with the award terms and conditions and that payment is due and has not been previously requested.*

*I certify that to the best of my knowledge, (1) the statements herein (excluding scientific hypotheses and scientific opinions) are true and complete; and (2) the text and graphics in this report as well as any accompanying publications or other documents, unless otherwise indicated, are the original work of the signatories or individuals working under their supervision.*

*I understand that the willful provision of false information or concealing a material fact in this report or any other communication submitted to EPA is a criminal offense (U.S. Code, title 18, Section 1001).*

Company Name:

Contract No.:

Authorized Company Officer:

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Principal Investigator:

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## Appendix 5

### FREQUENTLY ASKED QUESTIONS (FAQS)

**Q.** Where can I find information about the current SBIR Solicitation?

**A.** The Solicitation requirements are posted on the NCER/SBIR website (<http://www.epa.gov/sbir/>). A SBIR Fact Sheet is posted on this site which provides additional information about the program.

**Q.** Is our company eligible for a SBIR contract?

**A.** The Small Business Innovation Research (SBIR) program is a phased process across the Federal Government of soliciting proposals and awarding funding agreements for research (R) or research and development (R&D) to meet stated agency needs or missions. Only small business concern businesses are eligible to participate. A small business concern is described in full in the solicitation. For more information on eligibility and the SBIR Program in general, see [www.SBIR.gov](http://www.SBIR.gov).

**Q.** After submitting a proposal, what is the next step?

**A.** Once a proposal has been submitted and considered to be responsive, it will be forwarded for External Peer Review. You may expect to receive written feedback in or around March of 2017. Proposals evaluated “Very Good” and “Excellent” will also undergo an EPA Programmatic Review, as described in the solicitation. It is anticipated that approximately 18 contract awards will be made in or around May 2017.

**Q.** If a brief description/summary is provided about an offeror’s technology, could a representative from the EPA recommend the topic that best fits our technology?

**A.** It is the complete responsibility of the offeror to select and identify the best topic for its proposal as stated in Section I of the Solicitation.

**Q.** Can more than one proposal be submitted?

**A.** The same proposal cannot be submitted under more than one topic. An organization may, however, submit separate proposals on different topics, or different proposals on the same topic, as long as the proposals are not duplicates of the same research principle modified to fit the topic. If such duplicates are submitted, only one will be reviewed. Refer to Sections IV, V, and VI for additional requirements.

**Q.** Can we request a copy of the Solicitation or supporting Appendices?

**A.** This office does not mail copies of the solicitation. However, the solicitation and appendices are available on the following website: [www.fedconnect.net](http://www.fedconnect.net)

**Q.** Do we have to have a Tax Identification number before submitting a proposal?

**A.** No. BUT a Tax Identification is required at time of award.

**Q.** How do we submit our proposal?

**A.** The EPA is using an electronic proposal submission system, FedConnect. All companies must register in FedConnect before submitting a proposal. In addition, FedConnect requires that companies be registered with the System for Award Management (SAM).

**Q.** Do we need a DUNS number in order to submit a proposal?

**A.** Yes, firms need a DUNS number to register with the System for Award Management (SAM). All responsive firms must obtain a DUNS number and be registered with the System for Award Management (SAM) at <https://www.sam.gov/portal/public/SAM/> prior to registering in FedConnect.



## Appendix 5

### FREQUENTLY ASKED QUESTIONS (FAQS) CONTINUED

**If you have any problems registering in SAM, contact the Federal service desk at 1-866-606-8220. Tell the representative that you need to register your company name and information (which is your name and address). Once you register, it may take 2-3 weeks to become active in the system.**

**Q.** “What is” and “Who should be” the “Endorser” in regards to the proposal?

**A.** The Endorser is usually the Principal Investigator or President of the Company.

**Q.** What is the best way to protect proprietary information contained in our proposal?

**A.** A Proprietary Notice is located on the bottom of Appendix A, “Proposal Cover Sheet”.

**Q.** Can we use a consultant or subcontractor?

**A.** As stated in the Solicitation, for a SBIR Phase I proposal, a minimum of two-thirds of the research and/or analytical effort, as measured by the budget, must be performed by the proposing small business concern, and the balance of one third may be outsourced to a consultant or subcontractor or a combination of the two.

**Q.** Can a modification or update to a proposal be issued?

**A.** An Offeror can submit [changes and/or updates] prior to the closing date. After the closing date, there is NO opportunity to modify or update a proposal unless the change is requested by the Contracting Officer.

## Appendix 6

### COMMERCIALIZATION HISTORY

**This form should only be filled out by companies that have previously received an SBIR phase II Award from any federal agency.**

**Provide all information requested below for any SBIR Phase II Awards from any federal agency within the time period of calendar years (CY) 2011 to 2016.**

Company Name: \_\_\_\_\_

Year Company Founded: \_\_\_\_\_

Identify any name change your business has gone through within the past five years: \_\_\_\_\_

List the parent company if you subsidiary or a spin-off: \_\_\_\_\_

List subsidiaries and spin-off if you are a parent company: \_\_\_\_\_

Percentage of company revenues for each of the past three (3) fiscal years from federal SBIR/STTR funding (includes Phase I and Phase II awards):

Current Year: \_\_\_\_\_

2 Years Ago: \_\_\_\_\_

3 Years Ago: \_\_\_\_\_

Provide a table of each Phase II SBIR/STTR award below and provide the requested information.

- Grant/Contract Number
- Name of Federal Agency
- Topic of Sub-Topic Title
- Project Title
- Date of Award (Month/Day/Year)
- End of Award Period (Month/Day/Year)
- Total Amount of Award (including supplements) (\$K)
- Total Revenues (includes Sales, Service and/or Licensing Revenues) (\$K)
- Follow-on Federal Funding Amount (\$K)
- Subsequent Private-Sector Investment Amount (\$K)
- Subsequent State or Local Government Investment Amount (\$K)
- Current Commercialization Status