

**Strategic Environmental Research and Development Program (SERDP)
SERDP Exploratory Development (SEED)**

FY 2015 SEED STATEMENT OF NEED

Environmental Restoration (ER) Program Area

**IMPROVED MEASUREMENT AND ASSESSMENT OF
OFF-SITE CONTAMINANT INFLUX AND
POTENTIAL RECONTAMINATION OF AQUATIC SEDIMENT SITES**

The SEED Solicitation is a means for researchers to test a proof of concept during an effort of approximately one year.

1. Objective of Proposed Work

The objective of this Statement of Need (SON) is to develop tools to identify the sources of ongoing, contaminant influx to aquatic sediment sites that are either in the remedy decision, restoration, or long-term monitoring phase. The emphasis is on developing tools that will quantify contaminant influx and identify whether it is originating from on-site or off-site sources outside the actively managed area of concern. Proposed efforts should focus on one or both of the following objectives:

- Develop instrumentation, or arrays of instruments, capable of identifying ongoing contaminant sources that can be accounted for appropriately in remedy selection, design, implementation, and monitoring directly within the area of concern.
- Develop instrumentation, or arrays of instruments, capable of quantifying contaminant loads and physical characteristics, that can connect contaminant influx to surface sediment recontamination potential within the area of concern.

The focus of this SON is contaminated aquatic sediments, marine, estuarine, brackish, or freshwater. Proposers should be able to relate the measured physical and/or contaminant parameters to an estimate of recontamination potential, and time to recontaminate above remedial action levels.

In August 2012, SERDP and the Environmental Security Technology Certification Program (ESTCP) co-sponsored a Workshop on *Research and Development Needs for Long-Term Management of Contaminated Sediments*. This workshop identified high priority research topics involving improved understanding of potential recontamination sources for aquatic sediments. A more detailed description of these issues can be found in the report from the workshop. Proposers are strongly encouraged to review the workshop report for additional detail (<http://www.serdp-estcp.org/content/download/16022/182923/version/2/file/Sediment+Workshop+Report+October+2012.pdf>).

2. Background

Sediment contamination remains a significant liability for the Department of Defense (DoD). Collectively, the Services' contaminated sediment sites represent upwards of \$2 billion in estimated restoration costs. Complexities for site management include varying water body types and implications for sediment stability, mixed contaminants, urban environments, acceptance of uncertainty in risk management decisions, consideration of current and future use of sites, and the potential for internal or external contaminant flux.

While the DoD maintains a policy that off-site sources must be identified and controlled prior to implementing cleanup, federal and/or state orders often require cleanup before sources have been or can be controlled. In addition, restored sites may become recontaminated by continued input from off-site sources including permitted discharges, transport from upstream un-remediated contaminated sites, or from stormwater discharge. In most urban and industrial harbors and rivers, it is unlikely that all contaminant sources will be completely eliminated and aquatic sediments will be exposed to continued input from off-site sources. Recontamination from such sources can slow or even reverse recovery and instrumentation methodologies are needed to identify and account for ongoing contaminant influx on remedial decisions and management.

Complementary SERDP/ESTCP-Funded Projects: SERDP and ESTCP have supported several projects relating to the remediation and management of contaminated sediments. A brief description of these completed and ongoing projects can be found at the SERDP and ESTCP website (<http://serdp-estcp.org/Program-Areas/Environmental-Restoration/Contaminated-Sediments>).

3. Cost and Duration of Proposed Work

To meet the objectives of this SEED SON, proposals should not exceed \$150,000 in total cost and approximately one year in duration. Work performed under the SEED SON should investigate innovative approaches that entail high technical risk and/or have minimal supporting data. At the conclusion of the project, sufficient data and analysis should be available to provide risk reduction and/or a proof-of-concept. SEED projects are eligible for follow-on funding if they result in a successful initial project.

4. Point of Contact

Andrea Leeson, Ph.D.
Program Manager for Environmental Restoration
Strategic Environmental Research and Development Program (SERDP)
4800 Mark Center Drive, Suite 17D08
Alexandria, VA 22350
Phone: 571-372-6398
E-mail: Andrea.Leeson.civ@mail.mil

For SEED proposal submission due dates, instructions, and additional solicitation information, visit the SERDP web site at <http://www.serdp-estcp.org/Funding-Opportunities/SERDP-Solicitations>.