ESTCP Funding Opportunities

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FY 2018 ESTCP Funding Opportunities for Environmental Technologies

Herbert Nelson, Ph.D.
Director

Andrea Leeson, Ph.D.
Deputy Director
DoD’s Environmental Technology Programs

Science and Technology

Demonstration and Validation
Environmental Drivers

Reduction of Current and Future Liability

Contamination from Past Practices

- Groundwater, soils, and sediments
- Large UXO liability
- Emerging contaminants

Pollution Prevention to Control Life Cycle Costs

- Elimination of pollutants and hazardous materials in manufacturing, maintenance, and operations
- Achieve compliance through pollution prevention
Environmental Drivers

Sustainability of Ranges, Facilities, and Operations

Maritime Sustainability
Threatened and Endangered Species

Toxic Air Emissions and Dust

UXO & Munitions Constituents

Sustainable FOBs

Noise

Climate Change

Change in Temperature (°C) for (2040-2070) minus (1960-1990) : (DJF)
Program Area Management Structure

Weapons Systems & Platforms

Energy & Water

Resource Conservation & Resiliency

Munitions Response

Environmental Restoration
ESTCP Program Goals

- Demonstrate Innovative Cost-Effective Environmental and Installation Energy Technologies
  - Capitalize on past investments
  - Transition technology out of the lab
- Promote Implementation
  - Direct technology insertion
  - Gain regulatory acceptance

Priority: Needs of the DoD user community
ESTCP Demonstrations

- Desired Technologies
  - Can significantly benefit from a demonstration on a DoD installation
  - Require a demonstration to properly assess the cost and performance of the technology
  - Will utilize information from the demonstration to accelerate commercialization and broader adoption

- Mature commercial technologies already in use or with well established operational cost and performance criteria are not appropriate for demonstration and validation
ESTCP Methodology

- Partner With Stakeholders and Test at DoD Facilities
  - Developer, regulators, and end-user
  - Direct transition

- Validate Operational Cost and Performance
  - Independent test and evaluation
  - Satisfy regulatory and user communities

- Identify DoD Market Opportunities
  - Technology transfer
Project Requirements

- **Formal Demonstration Plans**
  - Detailed performance objectives
  - Independent review

- **Execution of Technology Demonstration**
  - Collect cost and performance data

- **Written Reports on Cost and Performance**
  - Technical report
  - Cost and performance summary report

- **Support for Transition**
  - Regulatory/end-user acceptance
  - Guidance and training
**ESTCP Solicitation Dates**

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<td>ESTCP Solicitations Released</td>
<td>January 5, 2017</td>
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<td>Pre-proposals Due</td>
<td>March 9, 2017, 2:00 p.m. Eastern Time</td>
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DoD Call for Proposals

- Call for Demonstration Projects
  - Address DoD environmental requirements
  - DoD lead required
- Short Written Pre-Proposal
  - Request full proposal (if selected)
  - Modifications recommended
- Selection
  - Full proposal
  - Oral presentation
Broad Agency Announcement and Call for Proposals for Federal Organizations Outside DoD

- Call for Technologies
  ♦ Specific topic areas

- Short Written Pre-Proposal
  ♦ Request full proposal (if selected)
  ♦ Modifications recommended

- Identify DoD Liaisons
  ♦ Site Selection
  ♦ Technology Transition

- Selection
  ♦ Full proposal
  ♦ Oral presentation
Selection Criteria

- Relevance (Pass/Fail)
- Appropriate for Demonstration (Pass/Fail)
- Technical Merit
- Cost/Benefit
- Transition Potential
- Cost
- Small Business Participation (For BAA Full Proposal)
Hallmarks of a Competitive Proposal

- Clearly Address a Topic Area
- Well Defined Demonstration Questions
- Provide Significant Benefit
  - Reduced costs
  - Improved performance
- Technically Sound
  - Detailed technology description
  - Well-defined performance objectives
  - Detailed technical approach
FY 2018 ESTCP Environmental Topics

Broad Agency Announcement & Call for Proposals for Federal Organizations Outside DoD
Innovative Technology Transfer Approaches

- Demonstrate innovative technology transfer approaches for technologies that have been successfully demonstrated under ESTCP or for mature bodies of knowledge that are appropriate for direct transfer that have been developed under SERDP.
  - The target communities of interest are primarily end users.
  - Target communities will likely benefit from technology transfer approaches specific to their mission, business processes, and manner of receiving information.
- Proposals must address why the focus technology is appropriate, the barriers to adoption, the key stakeholders, stakeholders information needs, and why the proposed approach is appropriate to the technology and the audience.
- Proposals should comprehensively address all stakeholders that will determine the adoption of the innovative technology.
- Proposals may focus on a broad array of SERDP and ESTCP investment areas, or be narrowly targeted.
- DoD organizations encouraged to submit proposals on this topic through the DoD submittal process.
Long Term Management of Contaminated Aquatic Sediments

- Demonstrate innovative technologies that specifically address the management, risk characterization, remediation, or monitoring of sediments contaminated with polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), heavy metals, or mixtures containing these contaminants.
- Contaminated marine, estuarine, brackish, and fresh water sediments are of interest.
- Proposals addressing sediments contaminated with radionuclides will not be considered.
- Proposed technologies should have completed all required laboratory work, although site specific treatability work prior to the field demonstration is acceptable.
Management of Contaminated Groundwater

- Demonstrate tools, methodologies, or technologies that can reduce the cost of managing DoD’s long term liability associated with contaminated groundwater.
- Groundwater contaminants of concern include chlorinated solvents, energetic compounds, emerging contaminants of interest to DoD, or mixtures of these contaminants.
- Primary focus is innovative technologies and approaches for managing sites and the associated risks where contamination will persist for a significant period of time after an initial remedy is selected.
  - Management tools or technologies for chlorinated solvent source zones in complex geological environments.
  - Management tools or technologies to address groundwater contaminated with emerging contaminants, such as the per- and polyfluorinated alkyl substances (PFASs).
  - Assessment of how to better combine existing or new technologies to address complex contaminated sites and make informed decisions on transitions from active remediation to passive technologies.
  - Optimization, assessment, and/or long-term monitoring tools related to remediation of contaminated groundwater.
Detection, Classification, and Remediation of Military Munitions in Underwater Environments

- Demonstrate technologies that detect, classify, or remediate military munitions found at underwater sites.
- Topics of particular interest include:
  - Wide area and/or detailed survey techniques
  - Cost-effective recovery and disposal methods
  - Management of underwater munitions sites
- Capabilities are needed for a wide variety of aquatic environments such as ponds, lakes, rivers, estuaries, and coastal and open ocean areas.
- Munitions of interest range from small projectiles and mortars to large bombs, although proposals need not address the entire range of potential munitions with a single solution.
- Many of the sites of interest have depths less than 5 meters although water depths up to 35 meters are of concern.
Use of Unmanned Aerial Vehicles (UAVs) for Safe and Cost Effective Natural Resources Management on Department of Defense Lands

- Demonstrate and validate the use of available commercial or military Unmanned Aerial Vehicles (UAVs) to cost effectively improve installation natural resource management.

- Demonstrate/validate UAV systems that:
  - Augment current installation management capabilities and processes.
  - Utilize complete systems that are affordable and compatible with current decision support systems.
  - Account for UAV control processes, automated image processing, and integration of data collection process with DoD planning and decision making processes.
  - Balance the potential benefits and limitations to the use of UAVs in installation natural resource management.
  - Demonstrate application to an appropriate niche or broad applicability to a range of high value practices.
  - Demonstrate applications where manned flights or other data collection practices would pose an unreasonable risk and/or cost.

- ESTCP is not interested in funding projects that develop or advance specific hardware capabilities of UAV systems.
Demonstration/Validation of Alternatives to Hexavalent Chromium in Manufacturing and Maintenance of Weapons Systems

- Demonstrate and validate alternative materials and processes to hexavalent chromium containing primers that are currently used on weapons systems.
- Alternative conversion coatings may be considered as part of a systems approach.
- Alternative technologies should:
  - Already be developed to at least a Technology Readiness Level (TRL) of 4, and the proposed project should bring it to TRL 7 or higher.
  - Provide equivalent or better corrosion protection and performance.
  - Be production level materials rather than laboratory batch level samples.
- Projects must demonstrate the ability to be used in production for the application specified.
- Project should include field testing or accelerated aging of coated items.
- All projects must involve at least one DoD organization as a funded co-performer that is considered a stakeholder for the intended application.
Waste to Energy Converters for Overseas Contingency Operations

- Demonstrate technologies for efficient onsite destruction of the non-hazardous mixed solid waste produced during overseas contingency operations.

- Proposed technologies shall be able to demonstrate (in order of preference):
  - Production of exportable useful fuel (without further refinement), electricity, or heated water;
  - Self-powered or “net energy neutral” operation; or
  - Minimization of demand for external liquid fuels or other energy inputs relative to conventional incineration.

- After processing, the residual waste volume should be reduced in excess of 95%, excluding non-combustibles.

- Proposed technologies shall:
  - Be capable of operating in worldwide deployment and climatic conditions.
  - Be automated, minimizing human labor during preparation, operation, and post-processing.
  - Not require unique skills or equipment to install, operate, or repair.
  - Comply with the applicable U.S. Environmental Protection Agency system design or operational requirements.
FY 2018 ESTCP Environmental Topics

Department of Defense Call for Proposals
Environmental Restoration

- **Monitoring**: Demonstrate technologies for the assessment or long-term monitoring of chemical contamination or biogeochemical indicators in soils, sediments, and water.

- **Reduction in Cost to Complete**: Reduce the Cost to Complete for contaminated groundwater or aquatic sediments by improving performance assessment or optimizing treatment.

- **Reduce Source Loading of Munitions Constituents**: Reduce source loading of munitions constituents during routine DoD operations and demilitarization activities.

- **Stormwater Treatment**: Management and treatment of stormwater runoff from DoD facilities.

- **Wastewater Treatment**: Innovative, energy efficient, low maintenance systems for decentralized treatment or recycling of wastewater on fixed installations.

- **Innovative Technology Transfer Approaches**: DoD investigators are encouraged to submit proposals through the DoD submittal process that respond to this BAA topic area.
Munitions Response in Underwater Environments

- **Wide Area and Detailed Surveys**
  - Rapid assessment of large areas to identify concentrations of munitions and areas free of munitions.
  - Must provide high areal coverage rates but may be successful with only modest probabilities of detection and classification.
  - Proposals addressing novel sensors, platform integration, or large-scale collection of field data at real munitions sites will be considered.

- **Cost-Effective Recovery and Disposal**
  - Technologies to cost-effectively and safely recover munitions in the underwater environment.
  - Focus on recovery in the shallow water environment and should address explosive safety issues.

- **Innovative Technology Transfer Approaches**
  - DoD investigators are encouraged to submit proposals through the DoD submittal process that respond to this BAA topic area.
Resource Conservation and Resiliency

- **Natural Resources**
  - Technologies for the sustainable management of natural resources on DoD installations.
    - Ecological Systems - Management of ecological systems to ensure the continued availability of realistic training and testing conditions, while preserving the long-term viability of installation and regional biological diversity and associated ecological processes.
    - Living Marine Resources Ecology and Management - Minimize the impacts of military operations on marine mammals and other marine resources.
    - Species Ecology and Management - Management of invasive species and listed and at-risk species.

- **Air Quality**
  - Technologies for the active management of fire emissions.

- **DoD investigators are encouraged to submit proposals through the DoD submittal process that respond to these BAA topic areas:**
  - Use of Unmanned Aerial Vehicles (UAVs) for Safe and Cost Effective Natural Resources Management on Department of Defense Lands
  - Innovative Technology Transfer Approaches
Weapons Systems and Platforms

- **Manufacturing and Maintenance**
  - Alternative materials, processes, and inspection methodologies
  - Monitoring and control of emissions

- **Green Energetics**
  - Alternative materials and manufacturing processes
  - Monitoring and control of emissions

- **Waste Reduction**
  - Ships and forward operating bases

- **Lead-Free Electronics**
  - Alternative alloys or conformal coatings that mitigate whisker growth or improve reliability of electronic components that are lead-free

- **Innovative Technology Transfer Approaches**
  - DoD investigators are encouraged to submit proposals through the DoD submittal process that respond to this BAA topic area.
For more information

https://www.serdp-estcp.org