ESTCP Funding Opportunities for FY 2017
Environmental Technologies and
Installation Energy and Water
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 & Energy Drivers

Sustainability of Ranges, Facilities, and Operations

- Maritime Sustainability
- Threatened and Endangered Species
- UXO & Munitions Constituents
- Installation Energy
- Toxic Air Emissions and Dust
- Noise
- Climate Change
- Change in Temperature (°C) for (2004-2070) minus (1960-1990)

Environmental & Energy Drivers
Program Area Management Structure

- Weapons Systems & Platforms
- Environmental Restoration
- Energy & Water
- Resource Conservation & Climate Change
- Munitions Response
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, 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 and end-user acceptance
  - Guidance and training
ESTCP Solicitation Process

- Department of Defense Call
- Broad Agency Announcement Call
- Federal Organizations Outside DoD Call

Pre-Proposal → Full Proposal → Oral Briefing → Selections
### ESTCP Solicitation Dates

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<tr>
<td>ESTCP Solicitations Released</td>
<td>February 9, 2016</td>
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<td>Pre-proposals Due</td>
<td>April 5, 2016, 2:00 p.m. Eastern Time</td>
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<td>Full Proposal Requested</td>
<td>June 2016</td>
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<td>August 2016</td>
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<td>Briefings Before ESTCP Technical Committee</td>
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<td>Project Initiation</td>
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DoD Call for Proposals

- Call for Demonstration Projects
  - Address DoD environmental requirements
  - DoD lead required
- Short Written Pre-Proposal
  - Full proposal requested
  - 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
  - Full proposal requested
  - Modifications recommended

- Identify DoD Liaisons
  - Site Selection
  - Technology Transition

- Selection
  - Full proposal
  - Oral presentation
FY 2017 ESTCP Environmental Topics

Broad Agency Announcement
Call for Proposals for Federal Organizations Outside DoD
In Situ Management of Contaminated Aquatic Sediments

- Objective: Demonstration of in situ technologies that specifically address the management, risk characterization, remediation, or monitoring of sediments contaminated with PAHs, PCBs, heavy metals, or mixtures containing these contaminants.

- Demonstrations of the following are of interest:
  - Demonstrations that facilitate the application and commercialization of passive samplers.
  - Tools to evaluate amendment placement.
  - New monitoring tools to reliably predict the long-term performance of remedies and the expected long-term risk reduction.
  - Technologies or tools that address the critical needs for advancing the regulatory acceptance and implementation of measures of bioavailability into contaminated sediments cleanup activities.

- Contaminated marine, estuarine, brackish, and fresh water sediments are of interest.
Reduce Source Loading of Munitions Constituents

- Objective: Demonstration of innovative tools, methodologies, or technologies that can reduce the source loading of munitions constituents during standard DoD operations and demilitarization activities.
- Technologies of interest are those that prevent migration of munitions constituents once they are released from the munitions.
- Munitions constituents of concern include perchlorate, RDX, HMX, TNT, DNT, NTO and DNAN.
- Proposed technologies should have completed all required laboratory work, although site-specific treatability work prior to the field demonstration is acceptable.
Detection, Classification, and Remediation of Military Munitions in Underwater Environments

- Objective: Demonstration of technologies to detect, classify, and remediate military munitions found at underwater sites.
- Technologies that will facilitate management of underwater munitions sites are also of interest.
- 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.
Fugitive Dust Technologies, Methodologies, and Tools for DoD Installations

- Objective: Demonstrate and validate technologies, methodologies, and tools that advance the management of fugitive dust emissions from Department of Defense (DoD) lands.
- Demonstrations should validate performance across the DoD complex of installations and specifically address DoD-unique dust emissions issues.
- Particular areas of interest include:
  - Fugitive dust monitoring technologies
  - Fugitive dust source characterization/generation approaches
  - User-friendly transport models for fugitive dust
Ecosystem Process Model Intercomparison

- Objective: Demonstrate and validate ecosystem process models using a cross-model comparison approach.
- Determine their usefulness to address management questions on DoD installations in the United States.
- Proposers are encouraged to propose multiple models to improve the efficiency of conducting model intercomparisons.
- Proposals should identify minimum datasets required, geographic scope of the models, ecosystem types to which the models can be applied, model initial condition requirements, and any critical model assumptions.
FY 2017 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
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

- 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
Resource Conservation

- **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 fugitive dust and fire emissions

- DoD investigators encouraged to submit proposals that respond to the BAA topic areas
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
FY 2017 ESTCP Topics
Installation Energy and Water

Broad Agency Announcement
call for Proposals for Federal Organizations outside DoD
Department of Defense Call for Proposals
**Energy Efficiency for Military Buildings**

- Demonstrate innovative approaches to improve the energy efficiency of buildings on military installations.
- Technologies of interest include but are not limited to:
  - improved commissioning
  - HVAC performance
  - building envelope
  - management and control
  - lighting
- Of particular interest:
  - Demonstrations of innovative approaches to holistic interior lighting retrofits that maximize the energy and cost savings potential of advanced lighting technology for office building and high bay applications.
Improved Water Use for Military Industrial Operations

- Demonstrate innovative approaches to more efficient use of water and its associated energy in surface finishing and repair industrial operations on DoD installations
- Reduce water use or allow safe and cost-effective reuse in all phases of these operations
- Demonstrations with the following characteristics are preferable:
  - Adaptability and applicability across DoD installations
  - High calculable water and associated energy savings, in addition to cost savings, as a direct result of the technology
  - Potential for high savings-to-investment ratio (SIR) and short simple payback for deployment after the demonstration
  - A clear pathway to technology adoption
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