

# SERDP and ESTCP Overview

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Strategic Environmental Research  
and Development Program



Environmental Security Technology  
Certification Program

# DoD's Environmental Technology Programs



## Science and Technology

- DoD, DOE, EPA Partnership
  - ◆ Fundamental research to impact real world environmental management
  - ◆ Advanced technology development to address near-term needs



## Demonstration/Validation

- Demonstrate Innovative Cost-Effective Environmental and Energy Technologies
- Promote Implementation
  - ◆ Direct Technology Insertion
  - ◆ Partner with End User and Regulator

# Environmental Drivers

## Sustainability of Ranges, Facilities, and Operations



Threatened and Endangered Species  
Maritime Sustainability



Toxic Air Emissions and Dust

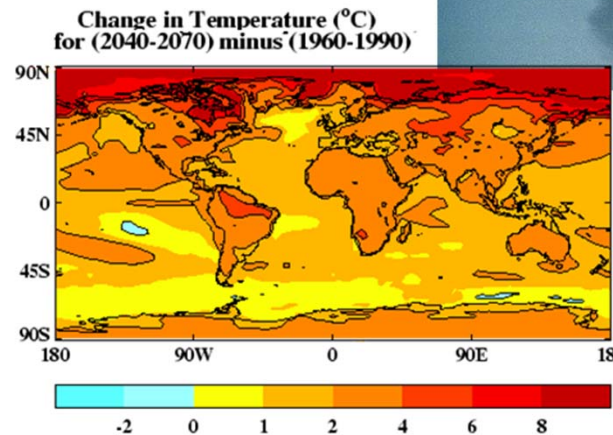


UXO & Munitions  
Constituents

Noise



Sustainable  
FOB



Changing  
Conditions

# 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



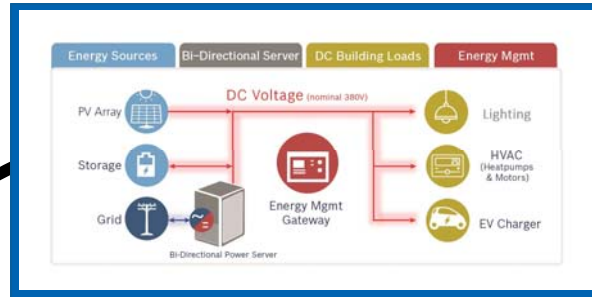
- Elimination of pollutants and hazardous materials in Manufacturing, Maintenance, and Operations
- Achieve compliance through pollution prevention
- Develop and assess alternative technologies

## DoD Drivers of SERDP's Work

- Training land availability
- Corrosion control
- PFOS/PFOA contamination
- Underwater UXO remediation
- Reliable and accurate data for planners
- ....

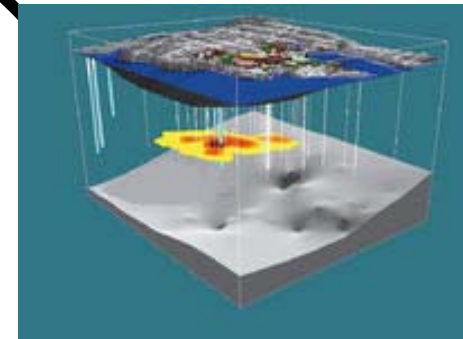
# Program Area Management Structure

**Weapons Systems & Platforms**



**Energy & Water  
(ESTCP only)**

**Environmental  
Restoration**



**Resource Conservation  
& Resiliency**



**Munitions  
Response**

# Resource Conservation & Resiliency

## Mission:

Through investments in Research, Development, Testing, and Evaluation (RDT&E), develop and transition knowledge, tools, and technology to enhance DoD's mission effectiveness through management of DoD's built and natural infrastructure.

## Priorities:

Meet DoD needs and consider potential RDT&E impacts.

# Key DoD Policies

- Department of Defense Directive **3200.15**:  
Sustaining Access to the Live Training and Test Domain
  - ◆ Preserve and sustain access and operational use of the live training and test domain needed to support current and future requirements through management that incorporates sound environmental principles and range sustainment considerations.
  - ◆ Sustain the resiliency and capacity of areas used for training and test through management that balances usage and level of maintenance to support realistic training and testing.
- Department of Defense Directive **4715.1E**:  
Environment, Safety, and Occupational Health (ESOH)
  - ◆ Manage installation assets to sustain the DoD national defense mission.
  - ◆ Manage the ESOH risks that DoD activities generate.
  - ◆ Prevent pollution, illness and injury, ensure cost-effective compliance, and maximize the existing resource capability.
  - ◆ Protect the public from risk of death, injury, illness, or property damage because of DoD activities.



# Resource Conservation & Resiliency Strategic Goals

Through RDT&E investments

- Maintain near and long term training and test capacity
- Minimize and prevent restrictions to training and testing today and in the future that arise from environmental regulations
- Manage the natural assets and mitigate the natural conditions that can impact installation infrastructure
- Ensure safe and healthy conditions on the installation

# Weapons Systems and Platforms Goals

- Reduce or eliminate the use of hazardous materials in its production and maintenance processes
- Reduce hazardous waste streams
- Better understand and mitigate emissions and other environmental impacts that result from its operations
- Ensure that alternative technologies, materials, and processes are adequately vetted from an environmental perspective

# Weapons Systems and Platforms Investment Areas

- Developing green alternative energetic compounds
- Understanding and mitigating military noise and emissions
- Removing hazardous materials such as hexavalent chromium and volatile organic compounds from manufacturing and repair processes
- Examining the use of alternative fuels and hybrid technology in vehicles
- Determining the impact of using lead-free solder in electronic components
- Examining accelerated aging protocols to yield tests that can accurately predict coating lifetimes
- Understanding and predicting life-cycle environmental costs

# Weapons Systems and Platforms FY-19 Statements of Need

- Aircraft Engine Noise Reduction Technology
- Predictive Corrosion Models to Mitigate Environmental Hazards
- Additive manufacturing of Gun Propellants with Reduced Environmental Impact
- Novel Pyrotechnics that Reduce Environmental Impact
- Multifunctional Fibers and textiles for Warfighter Integrated Protection

# Environmental Restoration

- **Mission**
  - ◆ To restore and manage contaminated lands on current and former military installations.
  - ◆ To develop and demonstrate innovative technologies to characterize, remediate, and scientifically manage contaminants in soil, sediments, and ground, surface and waste water.
  
- **Impacts**
  - ◆ Reduce the cost of remediation of DoD lands
  - ◆ Sustain the DoD's testing and training ranges
  - ◆ Create sustainable and more self sufficient Forward Operating Bases

# Environmental Restoration Drivers

- DoD Liability: Over 30,000 DoD sites: total cost >\$50B
- Major cost driver is contaminated groundwater
- Most common groundwater contaminant is chlorinated solvents (i.e., TCE, PCE)
- Many emerging contaminants and unique DoD groundwater contaminants
  - ◆ PFOS & PFOA
  - ◆ 1,4-Dioxane
  - ◆ Energetics (i.e., TNT, RDX, etc.)
  - ◆ Propellants (i.e., perchlorate)

# Environmental Restoration Major Focus Areas

- Contaminated groundwater
  - Contaminants on ranges
  - Contaminated sediments
  - Wastewater treatment
  - Risk assessment

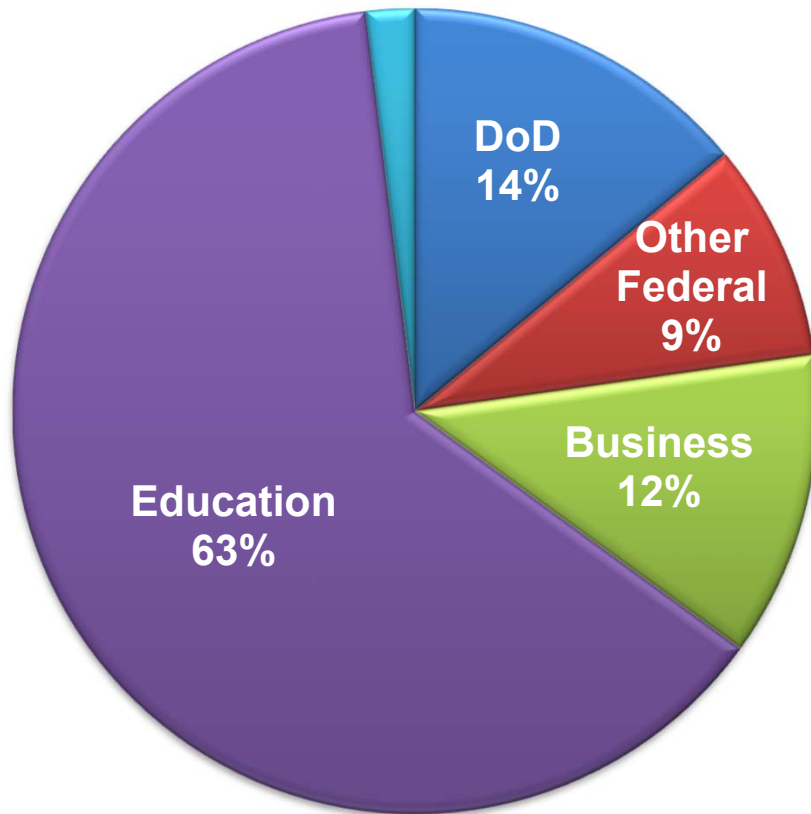
## FY-20 Key Dates

SERDP Statements-of-Need and call for pre-proposals	late October 2018
SERDP pre-proposals due	early January 2019
SERDP full proposals due	March 2019
ESTCP Topics and call for pre-proposals	early January 2019
ESTCP pre-proposals due	March 2019
ESTCP full proposals due	early August 2019

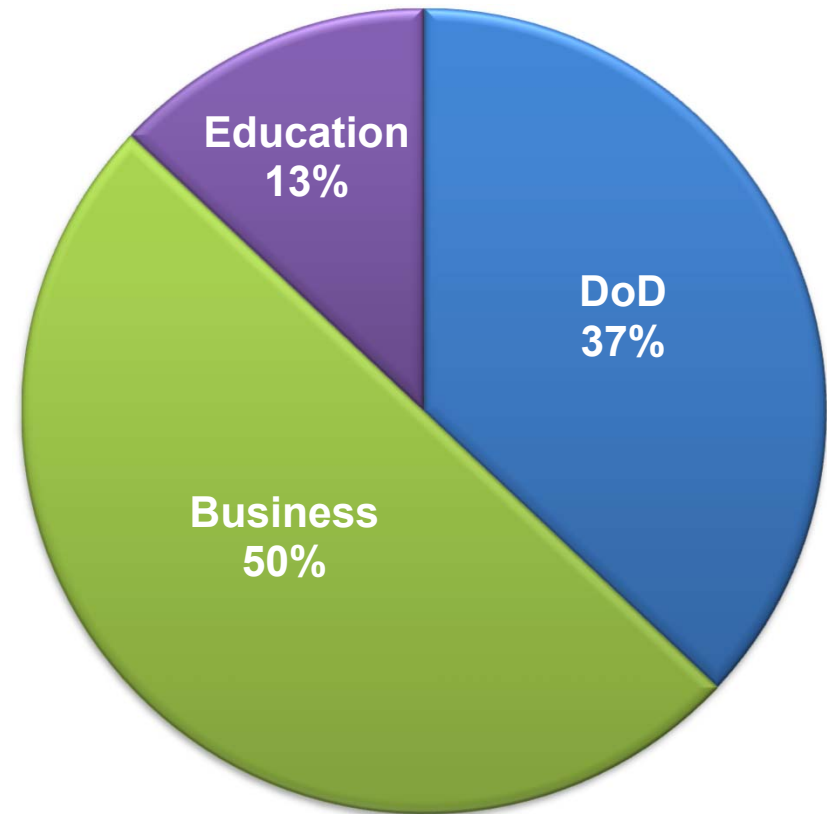


# FY-18 Projects By Organization

## SERDP - 91 Total



## ESTCP - 38 Total



SERDP ♦ ESTCP  
**SYMPOSIUM**  
2018 | Enhancing DoD's Mission Effectiveness

November 27 – 29, 2018  
Washington Hilton Hotel

<http://www.symposium.serdp-estcp.org>

## For More Information

[serdp-estcp.org](http://serdp-estcp.org)