

Guidance and Tips for Preparing SERDP & ESTCP Preproposals and Proposals (Short Course 3B)

Dr. Andrea Leeson

Carmen Lebron



Agenda

- Introduction & Goals
- SERDP & ESTCP: Mission & Structure
- Resources
- Questions
- SERDP's process and proposal guidelines
- Technology Transition
- Questions
- ESTCP's process and proposal guidelines
- Knowledge Quiz
- Questions

INTRODUCTION & GOALS



Agenda

- Introduction & Goals
- **SERDP & ESTCP: Mission & Structure**
- Resources
- Questions
- SERDP's process and proposal guidelines
- Technology Transition
- Questions
- ESTCP's process and proposal guidelines
- Knowledge Quiz
- Questions

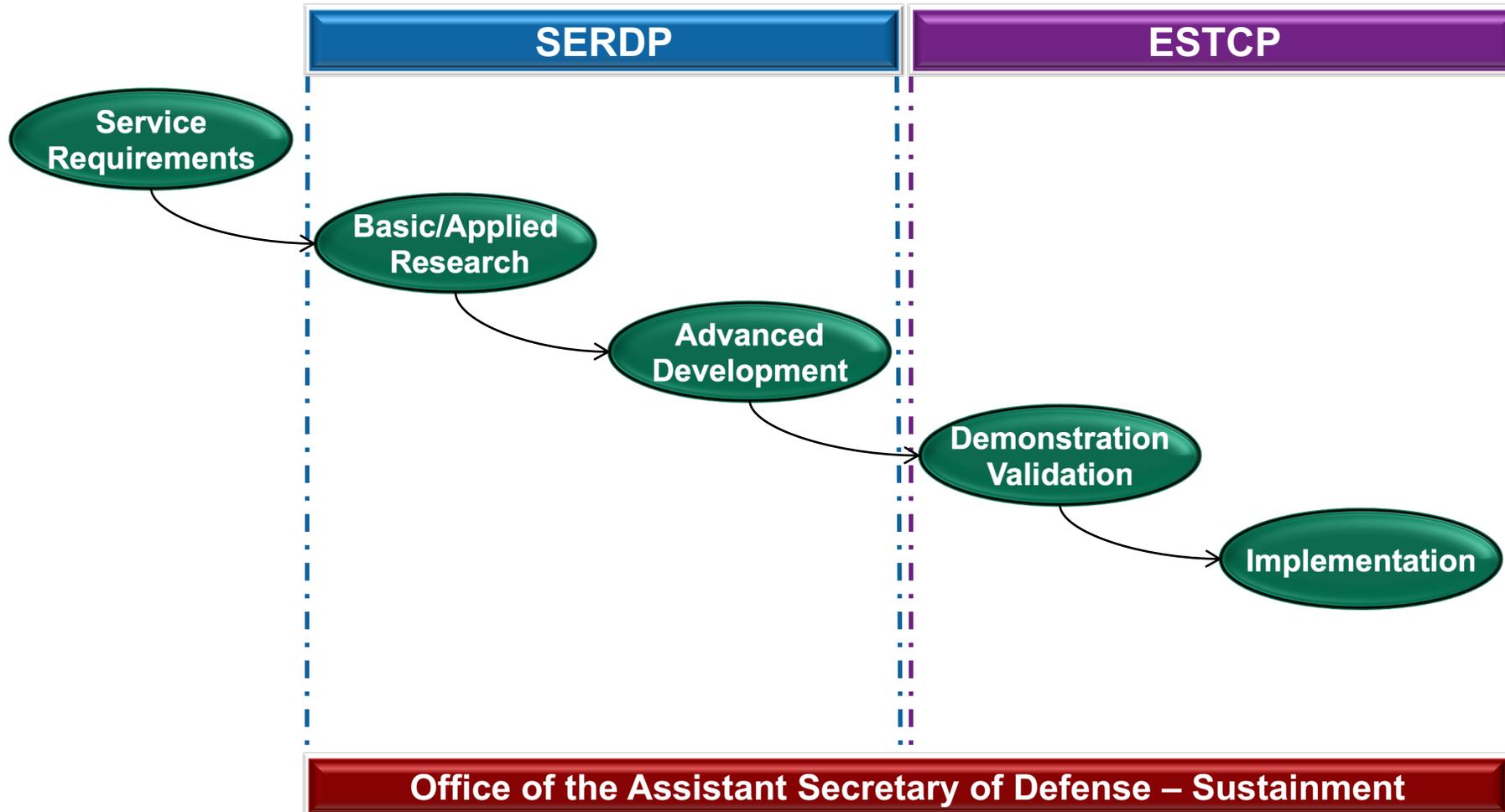
Strategic Environmental Research and Development Program (SERDP)

- Established by Congress in FY 1991
 - 10 U.S.C. Section 2901 - 2904
 - DoD, DOE, and EPA partnership
 - 6.3 Program Element with statutory authority to support 6.1 through 6.3
- High-priority environmental science and technology areas that address
 - DoD unique issues
 - Environmental issues with large costs to DoD

Environmental Security Technology Certification Program (ESTCP)

- Established by DoD in FY 1995
 - 6.4 Demonstration/Validation program
- Demonstrate innovative cost-effective environmental and energy technologies
 - Capitalize on past investments
 - Transition technology out of the lab
- Promote implementation
 - Facilitate regulatory acceptance

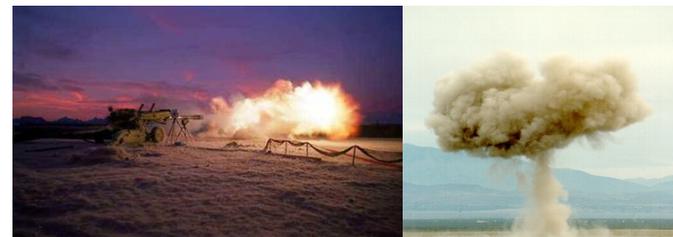
Environmental Technology Development Process



Environmental Drivers: Sustainability of Ranges, Facilities, and Operations



Threatened and Endangered Species
Maritime Sustainability



Toxic Air Emissions and Dust

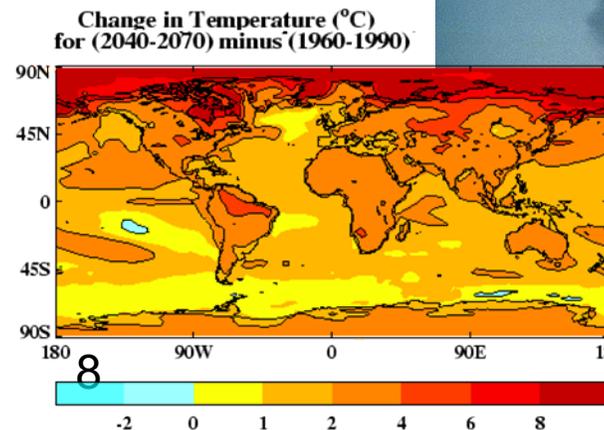


UXO & Munitions
Constituents

Noise



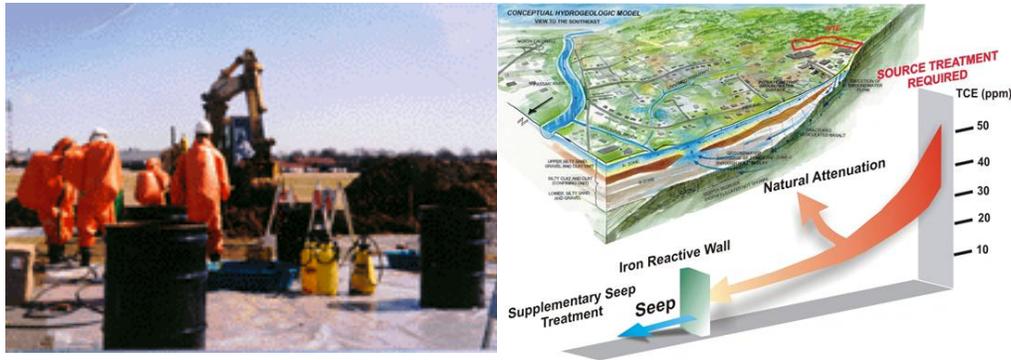
Sustainable
FOB



Changing
Conditions

Environmental Drivers: Reducing 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

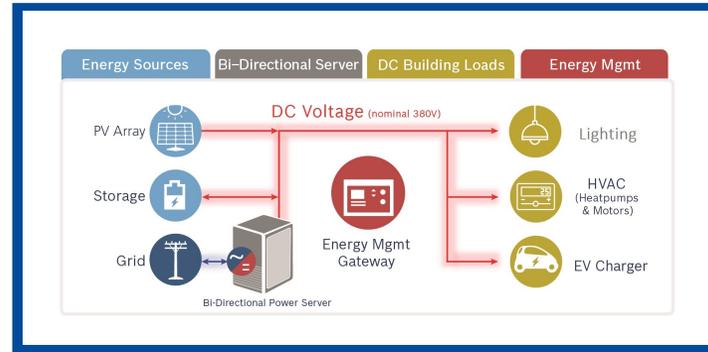
Program Area Management Structure

Weapons Systems & Platforms



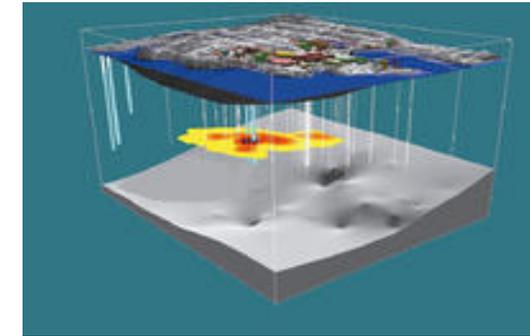
Resource Conservation & Resiliency

Installation Energy and Water



ESTCP Only

Environmental Restoration



Munitions Response

SERDP • ESTCP
SYMPOSIUM
#SerdpEstcp2019

Investment Approach

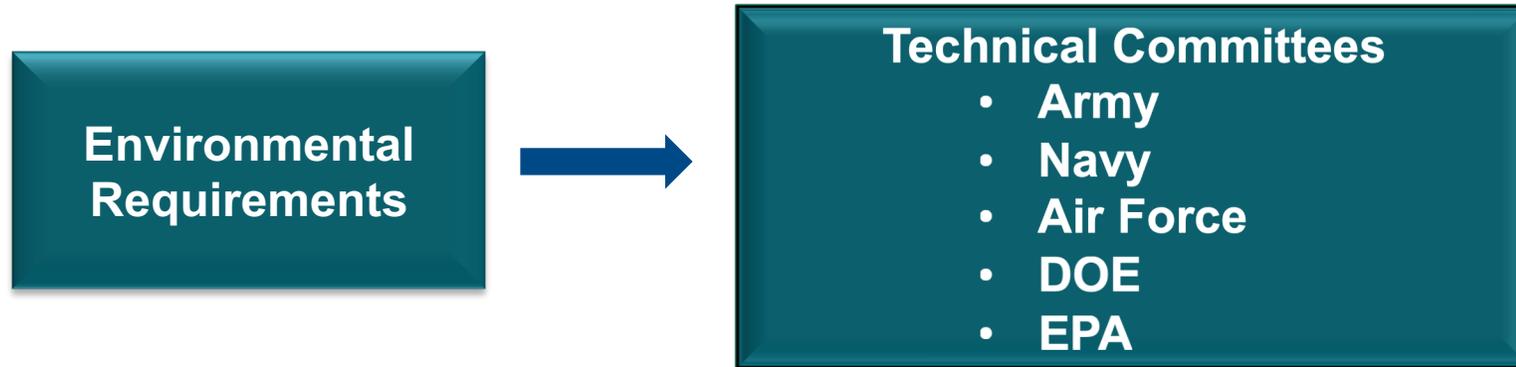
- Longer term strategic plans to address high priority requirements
 - Groundwater liability, live fire ranges, UXO, marine mammals and sonar, eliminating Cr+6 etc.
 - Issue-specific workshops form basis for strategic plans
- Focus on Sustainability and O&M Costs
 - Reduce costs and long term vulnerability at installations and ranges
 - Reduce life cycle costs of weapon systems
- Responsive to evolving requirements
 - Emerging Contaminants
 - Pb-free electronics
 - Policy Goals



Strategic Process

Environmental
Requirements

Strategic Process



Workshops

Key to identifying data gaps and research questions

Gather end users, policy makers
and technology implementers to
brainstorm for two days

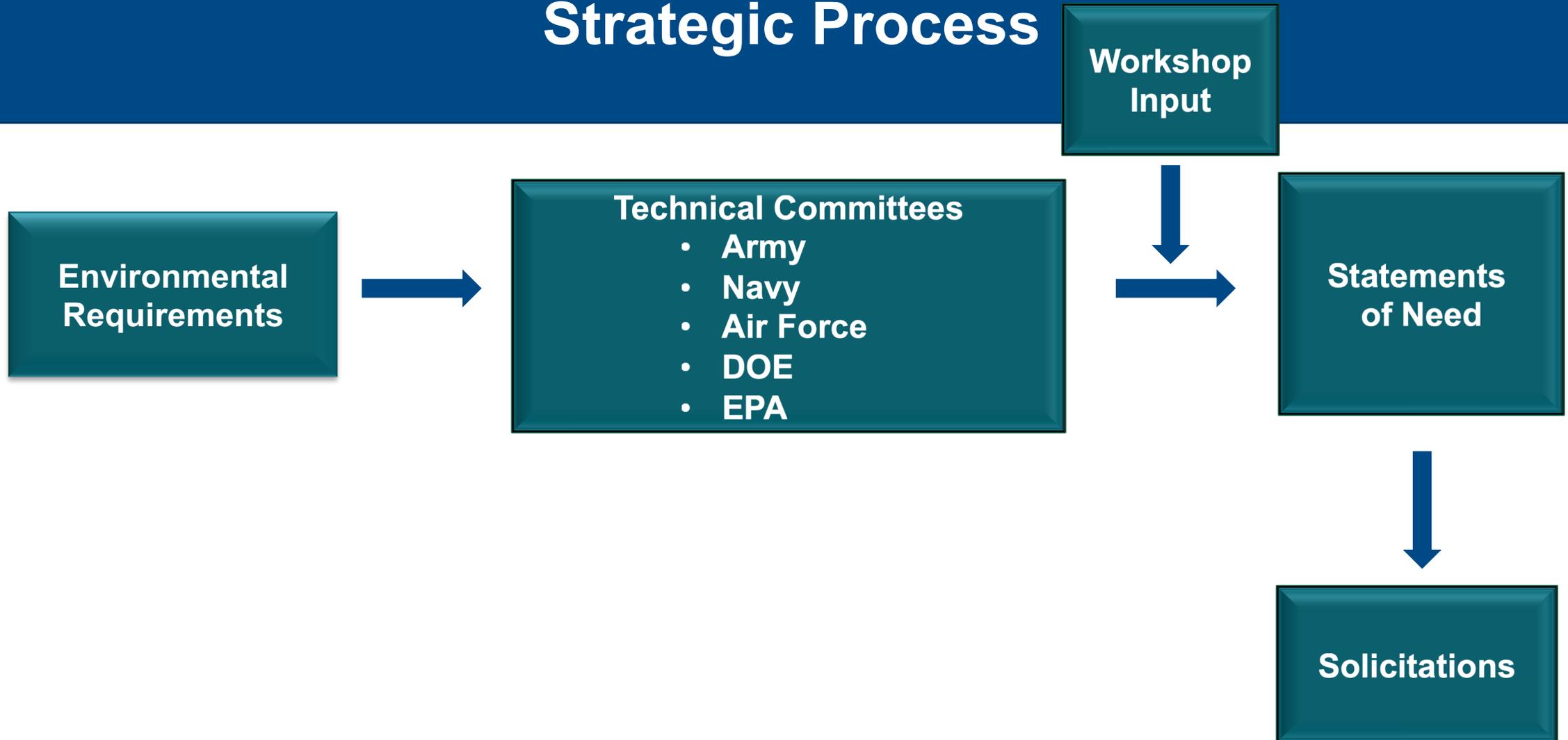
Generate report summarizing
discussions and data needs

Feeds into SERDP & ESTCP
strategic plan

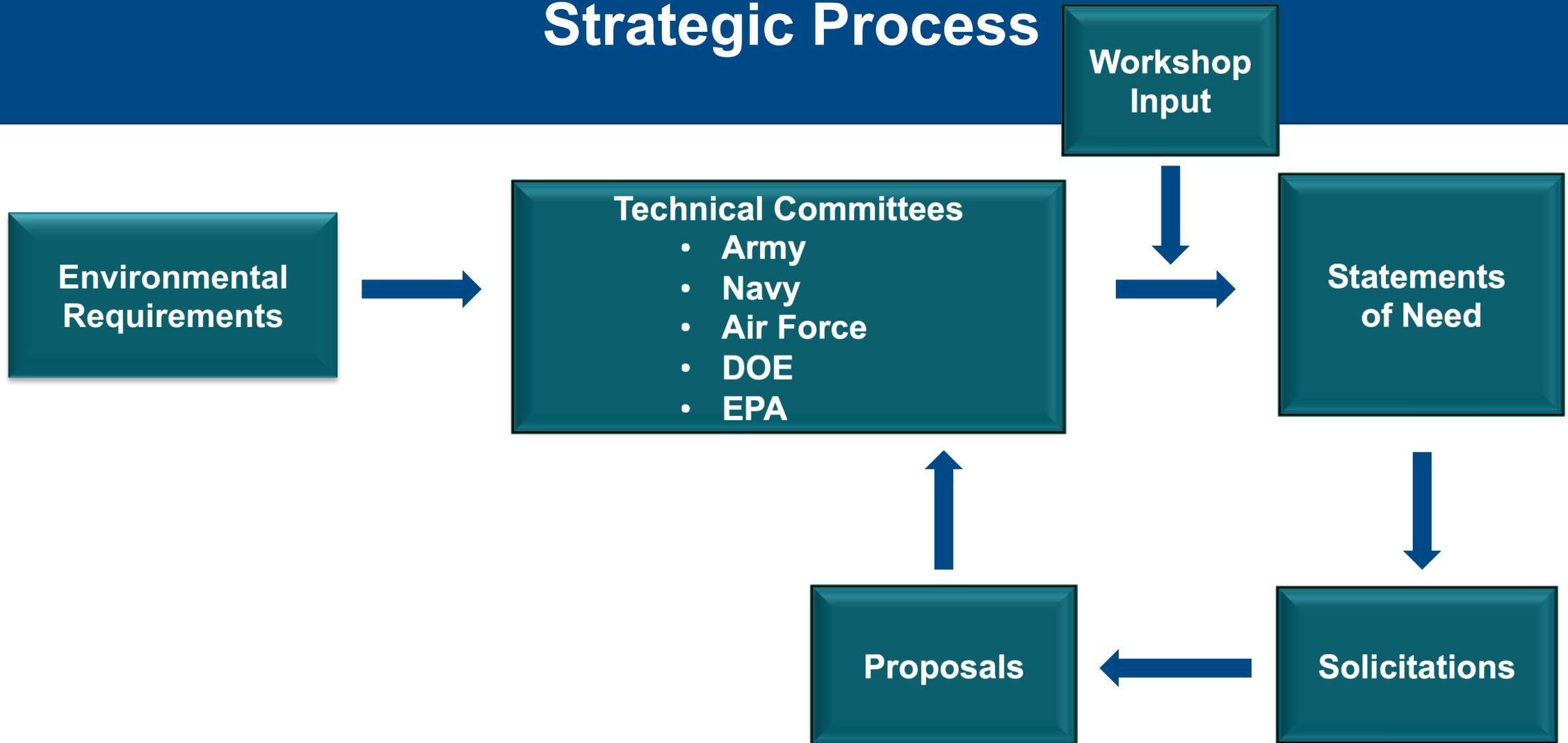
Strategic Process



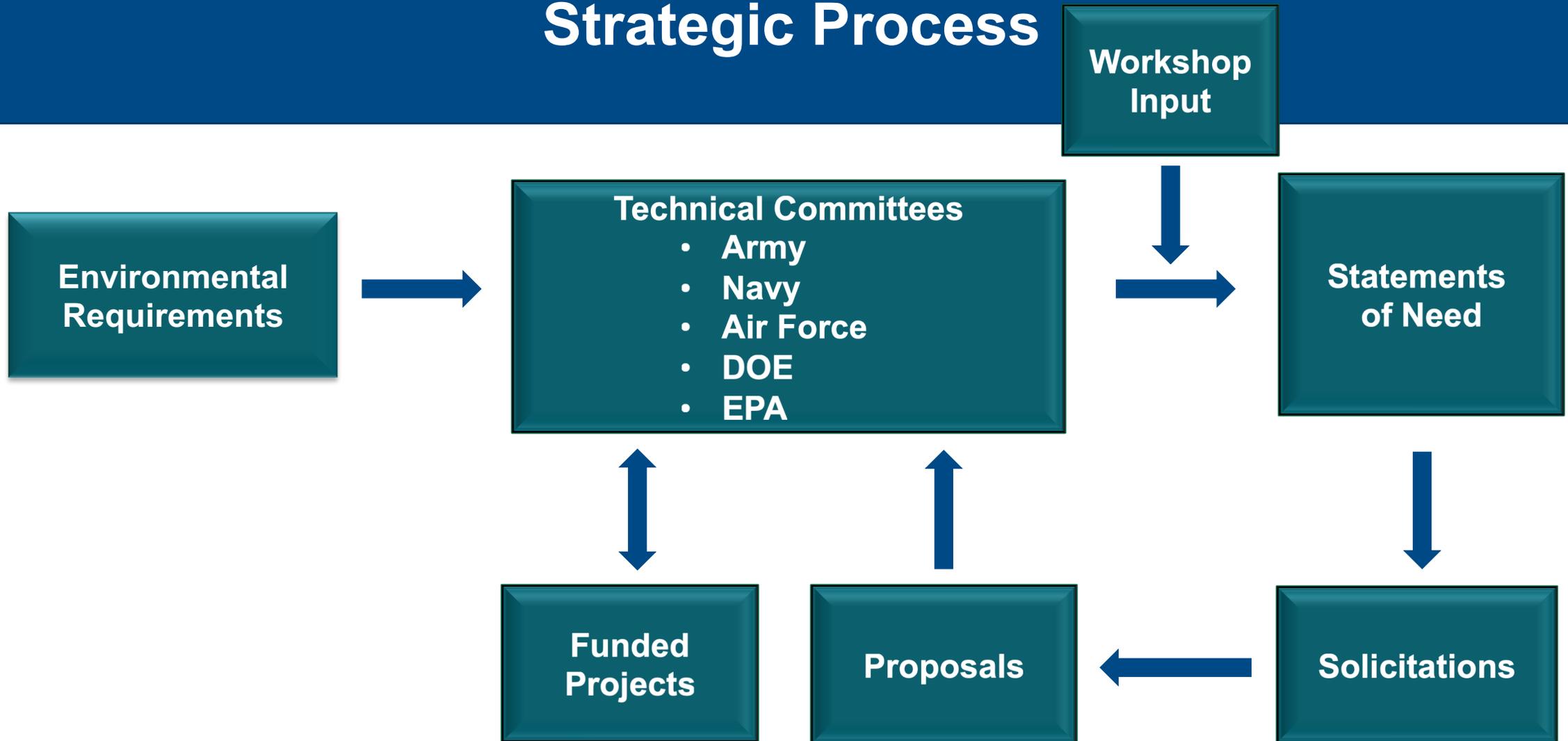
Strategic Process



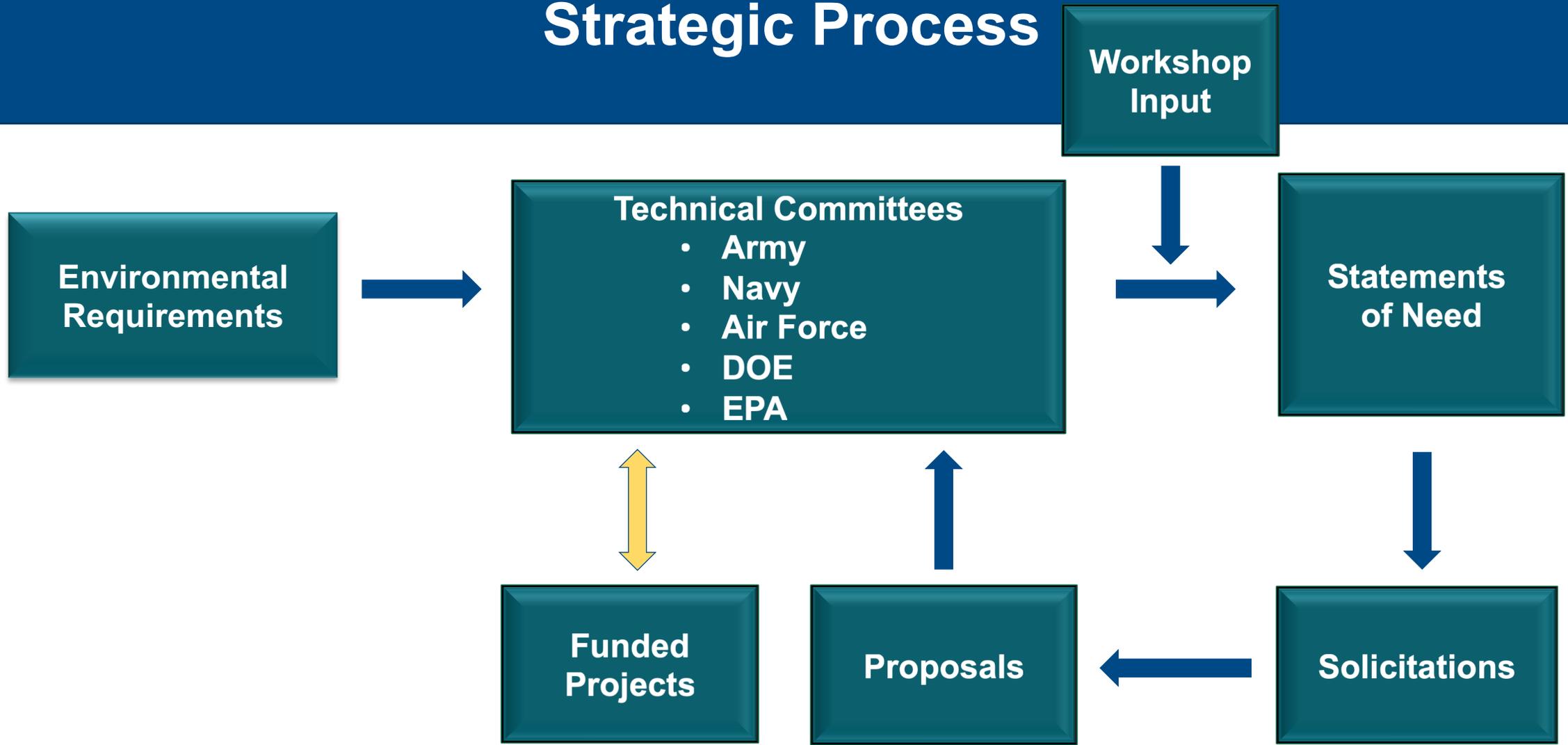
Strategic Process



Strategic Process



Strategic Process



Agenda

- Introduction & Goals
- SERDP & ESTCP: Mission & Structure
- Resources
- Questions
- SERDP's process and proposal guidelines
- Technology Transition
- Questions
- ESTCP's process and proposal guidelines
- Knowledge Quiz
- Questions

SERDP & ESTCP Resources

- Workshop Reports
- Past SERDP Statements of Need
- Selected projects

SERDP and ESTCP harness the latest science and technology to develop and demonstrate innovative, cost-effective, and sustainable solutions to meet DoD's environmental challenges.



- Symposium Registration and Room Block Information
- Improved Methods for PFAS Sampling in the Subsurface
- Symposium Sessions: WP Program Area Topics
- ← **Symposium Sessions: UXOs in Underwater Environments**
- SERDP FY 2021 Solicitations Released
- Symposium Sessions: Energy Resilience & Efficient Tech



The 2019 Symposium is coming up! Visit the [Symposium website](#) to register.

SERDP Solicitations

 Investing in environmental research and development.
FY 2021 SERDP Solicitation was released October 24, 2019.

→ [FY 2021 SERDP Solicitation](#); Pre-proposals are due January 7, 2020.

ESTCP Solicitations

 Demonstrating innovative environmental technologies.
FY 2020 Supplemental Solicitation was released October 17, 2019.

→ [Supplemental Solicitation](#); Proposals are due November 21, 2019.

Subscribe to the Mailing List

Stay up to date on SERDP and ESTCP announcements

Upcoming Events

- Dec 3-5 [SERDP and ESTCP Symposium 2019](#)
- Dec 12 [Webinar: Monitoring and Remediating Groundwater Contaminated with Chlorinated Solvents](#)
- Jan 7 [FY 2021 SERDP Core Pre-Proposals Due](#)
- Jan 16 [Webinar: Battery Energy Storage Modelling](#)

◆ [Calendar of Events](#)

News

- [SERDP Solicits Proposals for FY 2021 Funding](#) - Posted 10/24
- [ESTCP Releases Supplemental FY 2020 Solicitation](#) - Posted 10/17
- [SERDP and ESTCP Release Supplemental FY 2020 Solicitations](#) - Posted 8/1

◆ [More News](#)

Webinar Series

Promoting the transfer of innovative, cost-effective and sustainable solutions.
[View Webinar Schedule](#)

Tools and Training

Put innovative research and technologies to work.
[Access Tools & Training](#)

Blog

Posts highlighting research, technologies, and tools.
[Browse Blog](#)

SERDP and ESTCP harness the latest science and technology to develop and demonstrate innovative, cost-effective, and sustainable solutions to meet DoD's environmental challenges.



The 2019 Symposium is coming up! Visit the [Symposium website](#) to register.

SERDP Solicitations

 Investing in environmental research and development. **FY 2021 SERDP Solicitation was released October 24, 2019.**

→ [FY 2021 SERDP Solicitation](#); Pre-proposals are due January 7, 2020.

ESTCP Solicitations

 Demonstrating innovative environmental technologies. **FY 2020 Supplemental Solicitation was released October 17, 2019.**

→ [Supplemental Solicitation](#); Proposals are due November 21, 2019.

Subscribe to the Mailing List

Stay up to date on SERDP and ESTCP announcements

[Twitter](#)



Calendar

Blog

Conferences & Workshops

In the Spotlight

Funding Opportunities

FY 2021 SERDP Pre-Proposals Due January 7, 2020 by 2:00 p.m. ET

Symposium Registration and Room Block Information

Improved Methods for PFAS Sampling in the Subsurface

Symposium Sessions: WP Program Area Topics

Symposium Sessions: UXOs in Underwater Environments

← **SERDP FY 2021 Solicitations Released**

Symposium Sessions: Energy Resilience & Efficient Tech

Upcoming Events

- Dec 3-5 [SERDP and ESTCP Symposium 2019](#)
- Dec 12 [Webinar: Monitoring and Remediating Groundwater Contaminated with Chlorinated Solvents](#)
- Jan 7 [FY 2021 SERDP Core Pre-Proposals Due](#)
- Jan 16 [Webinar: Battery Energy Storage Modelling](#)

[Calendar of Events](#)

News

- [SERDP Solicits Proposals for FY 2021 Funding](#) - Posted 10/24
- [ESTCP Releases Supplemental FY 2020 Solicitation](#) - Posted 10/17
- [SERDP and ESTCP Release Supplemental FY 2020 Solicitations](#) - Posted 8/1

[More News](#)

Webinar Series

Promoting the transfer of innovative, cost-effective and sustainable solutions.

[View Webinar Schedule](#)

Tools and Training

Put innovative research and technologies to work.

[Access Tools & Training](#)

Blog

Posts highlighting research, technologies, and tools.

[Browse Blog](#)

Funding Opportunities

SERDP Solicitations

Funding Process

Core SONs

SEED SONs

Federal Core Proposal
InstructionsFederal SEED Proposal
Instructions

Past SONs

Non-Federal Core Proposal
InstructionsNon-Federal SEED Proposal
Instructions

Webinar

FAQs

ESTCP Solicitations

Open BAA

Other Funding Opportunities

[Home](#) > [Funding Opportunities](#) > SERDP Solicitations PRINT

SERDP Solicitations



NEW! The SERDP FY 2021 solicitation was released October 24, 2019. Researchers from Federal organizations, universities, and private industry can apply for SERDP funding via the appropriate solicitation below. All submissions must be in response to a **Statement of Need (SON)** associated with the solicitation.

Webinar - The SERDP Executive Director and Deputy Director conducted an online seminar [SERDP and ESTCP Funding Opportunities – FY 2021](#) on **November 12, 2019**, from **1:00-2:00 p.m. Eastern Time**.

SERDP Federal Call for
Proposals

Core Solicitation – *Pre-proposals are due January 7, 2020, by 2:00 PM ET.*

- [Executive Working Group Call for Proposals Memorandum](#)
 - [Statements of Need \(SON\)](#)
 - [How to Submit a Federal Core Proposal](#)
- SEED Solicitation** – *Proposals are due March 5, 2020, by 2:00 PM ET.*
- [Executive Working Group Call for Proposals Memorandum](#)
 - [Statement of Need \(SON\)](#)
 - [How to Submit a Federal SEED Proposal](#)

SERDP Non-Federal Broad
Agency Announcement

Core Solicitation – *Pre-proposals are due January 7, 2020, by 2:00 PM ET.*

- [Broad Agency Announcement](#)
 - [Statements of Need \(SON\)](#)
 - [How to Submit a BAA Core Proposal](#)
- SEED Solicitation** – *Proposals are due March 5, 2020, by 2:00 PM ET.*
- [Broad Agency Announcement](#)
 - [Statement of Need \(SON\)](#)
 - [How to Submit a BAA SEED Proposal](#)

Resources

Webinar: [SERDP Funding Opportunities – FY 2021](#), was presented on November 12, 2019.

[Past SERDP SONs](#)[SERDP Reporting Requirements](#)

Proposal Submission

→ [Login to SEMS to submit a proposal.](#)

Calendar

Schedule of events, solicitation deadlines, and training opportunities.

[View Calendar](#)

Full Proposal Guidance

Information for those requested to submit full proposals.

[View SERDP Guidance – FY 2020](#)

[View ESTCP Guidance – FY 2020](#)

- Funding Opportunities
- SERDP Solicitations
- Funding Process
- Core SONs
- SEED SONs
- Federal Core Proposal Instructions
- Federal SEED Proposal Instructions
- Past SONs
- Non-Federal Core Proposal Instructions
- Non-Federal SEED Proposal Instructions
- Webinar
- FAQs
- ESTCP Solicitations
- Open BAA
- Other Funding Opportunities

[Home](#) > [Funding Opportunities](#) > [SERDP Solicitations](#) > Past SONs

 PRINT

Past SONs



The links below provide archived material from the last nine years for informational purposes only.

[FY 2020 Supplemental SONs](#)

[FY 2020 SONs](#)

[FY 2019 SONs](#)

[FY 2018 Supplemental SONs](#)

[FY 2018 SONs](#)

[FY 2017 SONs](#)

[FY 2016 SONs](#)

[FY 2015 SONs](#)

[FY 2014 SONs](#)

[FY 2013 SONs](#)

[FY 2012 SONs](#)

FY 2020 SERDP SUPPLEMENTAL SOLICITATION SONs

ENVIRONMENTAL RESTORATION

[ERSON-20-A1](#) – Ecotoxicity of Fluorine-Free Surfactant Formulations

WEAPONS SYSTEMS AND PLATFORMS

[WPSON-20-A1](#) – Innovative Approaches to Fluorine-Free Fire Fighting Agents

FY 2020 SERDP CORE SOLICITATION SONs

ENVIRONMENTAL RESTORATION

[ERSON-20-C1](#) – Biodegradation of Per- and Polyfluoroalkyl Substances Found in Aqueous Film Forming Foams

[ERSON-20-C2](#) – Development of Passive Sampling Methodologies for Per- and Polyfluoroalkyl Substances

[ERSON-20-C3](#) – Development of Analytical Methods to Assess Leaching and Mobility of Per- and Polyfluoroalkyl Substances from Soils, Sediments, and Solid Wastes

[ERSON-20-C4](#) – Quantitative Groundwater Plume Characterization to Support Transition Assessments

[ERSON-20-C5](#) – Forensic Methods for Source Tracking and Allocation of Per- and Polyfluoroalkyl Substances

MUNITIONS RESPONSE

[MRSON-20-C1](#) – Detection, Classification, and Remediation of Military Munitions Underwater

RESOURCE CONSERVATION AND RESILIENCE

[RCSON-20-C1](#) – Installation Resilience Research: Theoretical Frameworks for Compound Threats

Proposal Submission

→ [Login to SEMS to submit a proposal.](#)

Calendar

Schedule of events, solicitation deadlines, and training opportunities.

[View Calendar](#)

Full Proposal Guidance

Information for those requested to submit full proposals.

[View SERDP Guidance – FY 2020](#)

[View ESTCP Guidance – FY 2020](#)

SERDP and ESTCP harness the latest science and technology to develop and demonstrate innovative, cost-effective, and sustainable solutions to meet DoD's environmental challenges.



The 2019 Symposium is coming up! Visit the [Symposium website](#) to register.

SERDP Solicitations

 Investing in environmental research and development. **FY 2021 SERDP Solicitation was released October 24, 2019.**

→ [FY 2021 SERDP Solicitation](#): Pre-proposals are due January 7, 2020.

ESTCP Solicitations

 Demonstrating innovative environmental technologies. **FY 2020 Supplemental Solicitation was released October 17, 2019.**

→ [Supplemental Solicitation](#): Proposals are due November 21, 2019.

Subscribe to the Mailing List

Stay up to date on SERDP and ESTCP announcements

Twitter

Follow



Visit the Symposium information

The room block is at the Marriott Wardman Park Inn. To see if rooms are available, visit the SERDP and ESTCP Symposium website.

**SYMPOSIUM**

- Per and Polyfluoroalkyl Substances PFASs**
- Range Sustainment
- Energy Assurance and Resilience
- Cleanup Initiatives
- Munitions Response Initiatives
- Green Manufacturing and Maintenance
- Conservation

- Symposium Registration and Room Block Information**
- Improved Methods for PFAS Sampling in the Subsurface
- Symposium Sessions: WP Program Area Topics
- Symposium Sessions: UXOs in Underwater Environments
- SERDP FY 2021 Solicitations Released
- Symposium Sessions: Energy Resilience & Efficient Tech

Upcoming Events

- Dec 3-5 [SERDP and ESTCP Symposium 2019](#)
- Dec 12 [Webinar: Monitoring and Remediating Groundwater Contaminated with Chlorinated Solvents](#)
- Jan 7 [FY 2021 SERDP Core Pre-Proposals Due](#)
- Jan 16 [Webinar: Battery Energy Storage Modelling](#)

[Calendar of Events](#)

News

- [SERDP Solicits Proposals for FY 2021 Funding](#) - Posted 10/24
- [ESTCP Releases Supplemental FY 2020 Solicitation](#) - Posted 10/17
- [SERDP and ESTCP Release Supplemental FY 2020 Solicitations](#) - Posted 8/1

[More News](#)

Webinar Series

Promoting the transfer of innovative, cost-effective and sustainable solutions.

[View Webinar Schedule](#)

Tools and Training

Put innovative research and technologies to work.

[Access Tools & Training](#)

Blog

Posts highlighting research, technologies, and tools.

[Browse Blog](#)

SERDP and ESTCP Efforts on PFAS

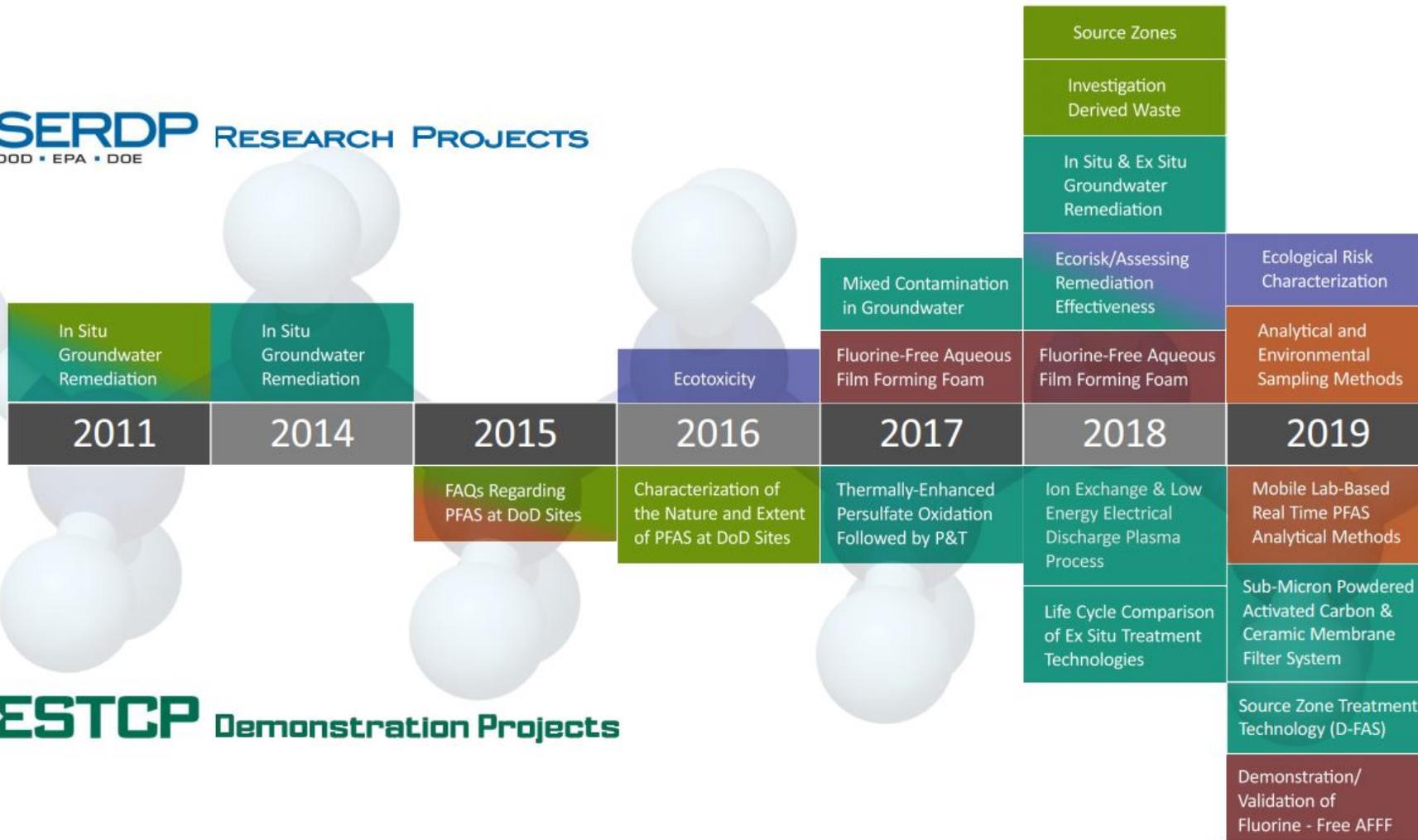
Workshop Report:
Long Term Mgmt of
Contaminated
Groundwater

Workshop Report:
PFAS R&D Needs

Workshop on PFAS:
Sampling, Analysis
and Treatment

SERDP RESEARCH PROJECTS

DOD • EPA • DOE



ESTCP Demonstration Projects

Program Areas

Installation Energy and Water

Environmental Restoration

Contaminated Groundwater

Persistent Contamination

Monitoring

Emerging Issues

Contaminated Sediments

Contaminants on Ranges

Wastewater and Drinking Water

Risk Assessment

Munitions Response

Resource Conservation and
ResiliencyWeapons Systems and
Platforms

[Home](#) > [Program Areas](#) > [Environmental Restoration](#) > [Contaminated Groundwater](#) >
[Contaminated Groundwater SONs](#) > Analytical & Environmen...

 PRINT

Development of Standardized Analytical and Environmental Sampling Methods for Per- and Polyfluoroalkyl Substances in the Subsurface

FY 2019 STATEMENT OF NEED

Environmental Restoration (ER) Program Area

The objective of this Statement of Need (SON) was to develop improved analytical and environmental sampling techniques for per- and polyfluoroalkyl substances (PFASs). Specifically, the goal was to address the following research needs:

- Development of sampling techniques to evaluate soil and water columns, including consideration of potential biases associated with sampling supplies and equipment, and decontamination procedures for use at both minimally and highly contaminated sites.
- Evaluation of potential media to be used for passive samplers and their performance.
- Assessment of subsampling techniques to determine the process by which the subsample provides results that are most representative of the entire sample collected.
- Development of procedures to assess the total organofluorine in environmental waters, soil, and sediment.
- Development of rapid field screening procedures for PFASs.
- Development of extraction techniques to produce the most accurate and precise quantitation.
- Evaluation of techniques to eliminate matrix interference.
- Evaluation of techniques to achieve the lowest limit of quantitation possible when analyzing aqueous film forming foam (AFFF) formulations and samples containing high concentrations of PFASs while achieving the required precision and accuracy.
- Evaluation of techniques that could be used to ensure precision and accuracy of total PFAS analytical procedures.

The projects listed below were selected to address the objectives of this SON. Additional information on individual projects will be available soon.

→ [Bench-Scale Assessment of Nuclear Magnetic Resonance \(NMR\) and Complex Resistivity \(CR\) Screening Technologies for Rapid Assessment of PFASs in Soils and Sediments](#)

→ Lead Investigator: Dr. Lee Slater, Rutgers University Newark

→ [Developing PIGE into a Rapid Field-Screening Test for PFAS](#)

→ Lead Investigator: Dr. Graham Peaslee, University of Notre Dame

→ [Development and Validation of Analytical Methods for Comprehensive Profiling of Perfluoroalkyl and Polyfluoroalkyl Substances in Firefighting Foam Impacted Environmental Matrices](#)

→ Lead Investigator: Dr. Jinxia Liu, McGill University

→ [Assessing and Mitigating Bias in PFAS Levels during Ground and Surface Water Sampling](#)

→ Lead Investigator: Dr. Jennifer Field, Oregon State University

→ [Rapid Site Profiling of Organofluorine: Quantification of PFASs by Combustion Gas Analysis](#)

→ Lead Investigator: Dr. David Hanigan, University of Nevada, Reno

Program Areas

Installation Energy and Water

Environmental Restoration

Contaminated Groundwater

Contaminated Sediments

Bioavailability

In-place Remediation

Stormwater

Characterization

Fate and Transport

Munitions Constituents

Contaminants on Ranges

Wastewater and Drinking Water

Risk Assessment

Munitions Response

Resource Conservation and
ResiliencyWeapons Systems and
Platforms[Home](#) > [Program Areas](#) > [Environmental Restoration](#) > [Contaminated Sediments](#) >
[Characterization](#) > ER19-1128 Project Overview

PRINT

Bench-Scale Assessment of Nuclear Magnetic Resonance (NMR) and Complex Resistivity (CR) Screening Technologies for Rapid Assessment of PFASs in Soils and Sediments

Dr. Lee Slater | Rutgers University Newark

ER19-1128

[Objective](#) | [Approach](#) | [Benefits](#)

Objective

The nature and distribution of per- and polyfluoroalkyl substances (PFASs) in aqueous film forming foam (AFFF)-impacted source areas remains poorly understood. This project addresses the Department of Defense (DoD) need for development and demonstration of rapid field screening methods for determining the extent of a plume over AFFF source areas and the use of rapid field assays to provide semi-quantitative screening values to reduce site investigation and remedial decision-making timeframes. The overarching objective of this project is to perform the bench-top experiments needed to evaluate the potential for using two existing borehole-deployable geophysical technologies, Nuclear Magnetic Resonance (NMR) and Complex Resistivity (CR), as rapid screening tools for evaluation of PFASs in soils/sediments. The tantalizing possibility that NMR and CR may be sensitive to PFASs in source zones results from the potential for PFAS sorption onto soil surfaces sufficiently modifying the geophysical responses.

Specific objectives of the project include: (1) acquire bench top NMR and CR measurements on three types of synthetic samples [sand/organic soils, sand/clays, sand/iron oxides] contaminated with PFAS and/or AFFF solutions at source zone concentrations, and (2) acquire bench top NMR and CR measurements on natural soils from AFFF source zone locations allowing a comparison of signal from contaminated versus uncontaminated soils.

[Back to Top](#)

Technical Approach

This project will exclusively focus on bench-scale techniques to obtain a mechanistic assessment of the possibility of PFAS source zone assessment using NMR or CR. Measurements will be performed on both synthetic soils and natural soils acquired from AFFF-impacted sites. Synthetic soils provide controlled conditions where the composition of the sediments and the contaminants can be defined. They will be prepared as mixtures of Ottawa sand and constituents expected to enhance the sorption of PFASs onto soil surfaces. Natural soils will be acquired from AFFF-impacted sites. Real AFFF-impacted soils will likely contain a wide range of precursor compounds, including the cationic (highly sorbing) species. Furthermore, they provide an opportunity to more directly demonstrate site relevance. Soils will be spiked with

Points of Contact

Principal Investigator

Dr. Lee Slater
Rutgers University-Newark
Phone: 973-353-5109
Fax: 973-353-1965
lslater@rutgers.edu

Program Manager

Environmental Restoration
SERDP and ESTCP
er@noblis.org

Agenda

- Introduction & Goals
- SERDP & ESTCP: Mission & Structure
- Resources
- Questions
- SERDP's process and proposal guidelines
- Technology Transition
- Questions
- ESTCP's process and proposal guidelines
- Knowledge Quiz
- Questions

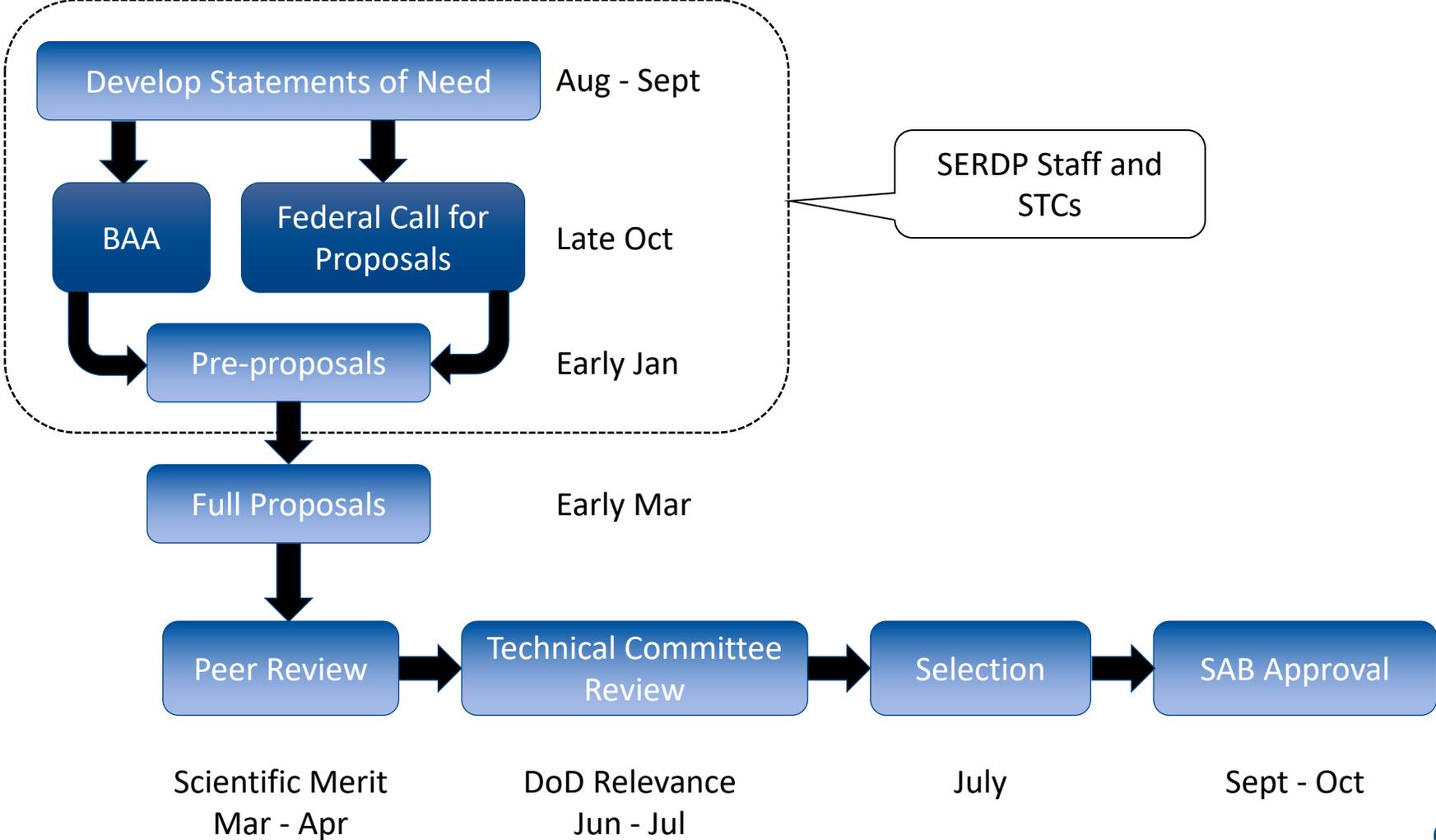
Agenda

- Introduction & Goals
- SERDP & ESTCP: Mission & Structure
- Resources
- Questions
- SERDP's process and proposal guidelines
- Technology Transition
- Questions
- ESTCP's process and proposal guidelines
- Knowledge Quiz
- Questions

Solicitations

- SERDP Core Statements of Need (SON)
 - Multiple awards per SON
 - Multi-year Proposals & Limited Scope Proposals
 - Broad Agency Announcement (BAA)
 - Universities, industry, and non-governmental organizations
 - Federal Call
 - DoD and other Federal agencies
- SERDP Exploratory Development (SEED) SON
 - \$200K or less and approximately 1 year
 - Seeks innovative high-risk and high-payoff work
 - BAA and Federal Call
- ESTCP Topics
 - Multiple awards per topic
 - Multi-year Proposals
 - Broad Agency Announcement (BAA)
 - Universities, industry, and non-governmental organizations
 - Federal Call (Non-DoD)
 - DoD Call

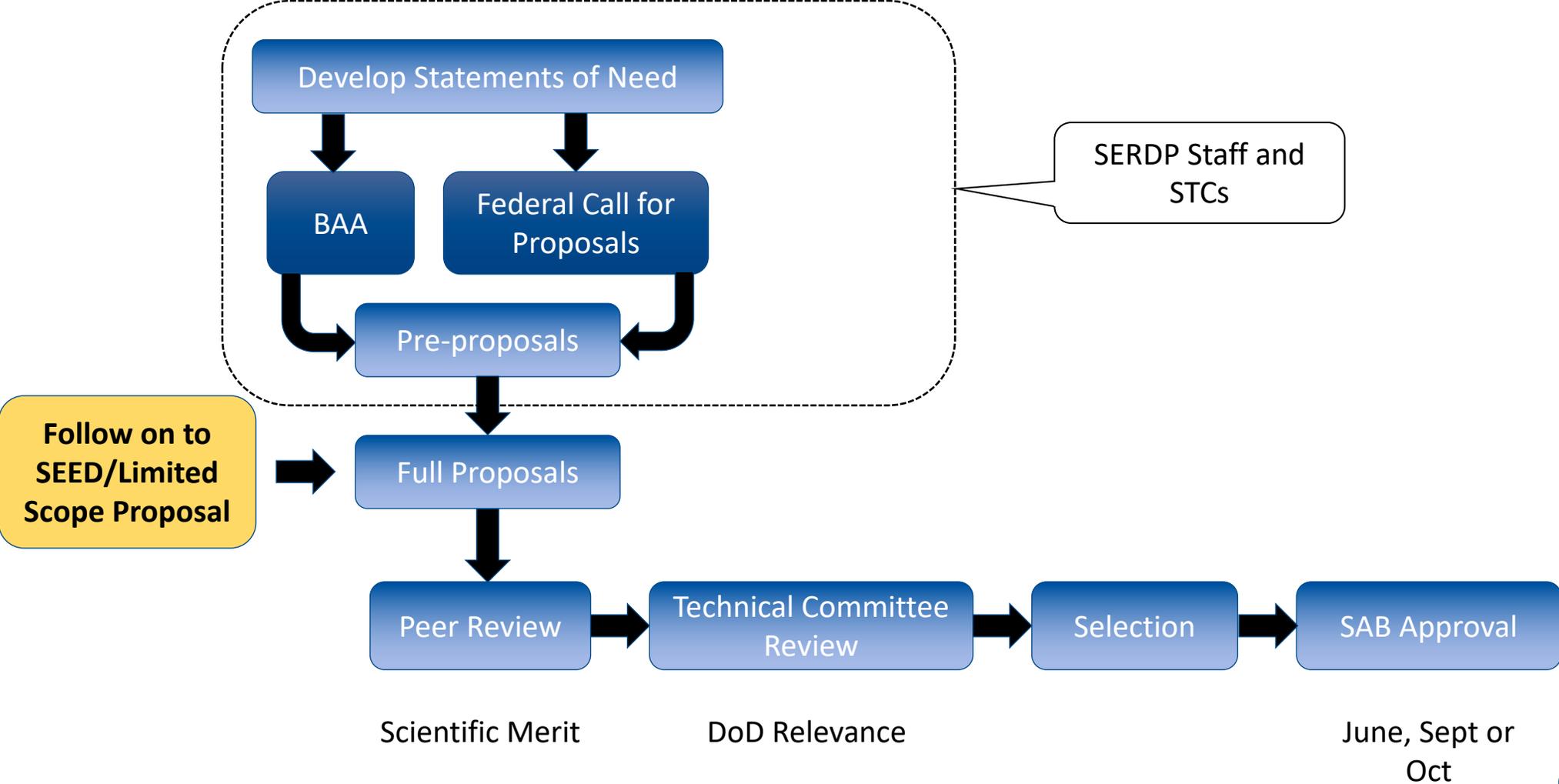
SERDP Funding Process



Limited Scope or SEED Proposals

- Proof-of-concept
- High risk, high payoff
- Limited scope are submitted to SONs in regular solicitation, process is the same except for SAB presentation
- SEED solicitation has slightly different process, but goal is the same (proof of concept, high risk/high payoff projects)
 - No preproposal, straight to 10-page full proposal
 - No peer review or presentation to SAB
- If successful, follow on proposal requested => peer review =>

SERDP Funding Process



SERDP Proposals

• Preproposal Content

- Title, Lead Investigator, Lead Organization
- Objective
- Background
- Approach
- Schedule
- Cost
- Research Team
- Supporting technical data (optional)
- Existing support (optional)

• Full Proposal Content

- Title, Lead Investigator, Lead Organization
- SERDP Relevance
- Technical Objective
- Technical Approach
 - Background
 - Approach
 - Milestones
 - Research Team
 - Cooperative Development
 - Transition Plan
- Cost Proposal

SERDP Proposals

• Preproposal Content

- Title, Lead Investigator, Lead Organization
- Objective
- Background
- Approach
- Schedule
- Cost
- Research Team
- Supporting technical data (optional)
- Existing support (optional)

• Full Proposal Content

- Title, Lead Investigator, Lead Organization
- SERDP Relevance
- Technical Objective
- Technical Approach
 - Background
 - Approach
 - Milestones
 - Research Team
 - Cooperative Development
 - Transition Plan
- Cost Proposal

SERDP Relevance

- Statements of Need are carefully prepared to describe issues of concern
- Proposals **MUST** address issues listed in Statement of Need
- This section should be used to clearly state how the proposed effort is relevant.
- Clearly call out how the proposed research addresses the Statement of Need, and specially, which sub-objectives within the Statement of Need
- Please note, in the preproposal, SERDP relevance is combined into the Objectives statement

Objectives

- SERDP should be hypothesis-driven work
- Hypotheses should drive the development of the objectives
- Use this section to clearly lay out hypotheses with associated objectives
- Frequently, an overarching objective with more specific sub-objectives is useful

Background

- Reviewers are looking to see that the investigator understands the scientific basis for proposed effort and is well versed in current literature
- The background should tell a story that leads to rationale for proposed effort
- Frequently, reviewers will comment on literature citations that are not current, or where significant papers aren't acknowledged

Technical Approach

- Primary focal point of the proposal
- Should be structured in hypothesis-driven tasks
 - Avoid structuring approach on how the research will be done (i.e., column studies, sampling, etc.) but instead structure based on research questions (understanding kinetics, toxicity assessment, etc.)
- Each task should answer three questions
 - Why, what and how
- Should include as much detail on the tasks as space allows

Research Team

- Clearly delineate the role of each team member
 - This can also be captured briefly in the Task descriptions, if certain team members are responsible for specific tasks
- For large teams, include description of a management plan
 - How will the team interact and stay in the loop on the larger effort
- Consider addition of team members who can broaden perspective, as appropriate

Milestones & Schedule

- Fairly straightforward, but give some thought to flow of tasks
- Reviewers look to see if flow makes sense, where are go/no go points or decision points

Agenda

- Introduction & Goals
- SERDP & ESTCP: Mission & Structure
- Resources
- Questions
- SERDP's process and proposal guidelines
- **Technology Transition**
- Questions
- ESTCP's process and proposal guidelines
- Knowledge Quiz
- Questions

Transition Plan

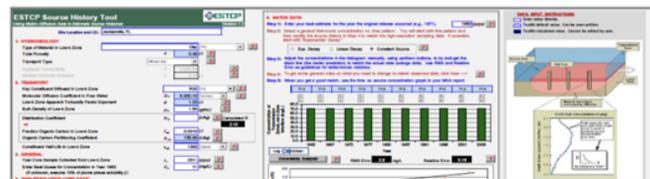
- Research program but mission focused
- Transition plans consisting of Final Report, peer reviewed articles, conference presentations are of little interest
- Consider audiences (end users, etc.) and how best to reach different audiences
- Make use of current platforms in innovative ways
- Presentations to user communities
 - Installations
 - EPA
 - ITRC

Website: www.serdp-estcp.org



End-Products: Simple Spreadsheets

Source History Tool – Excel-based, single-screen, free



Welcome to ENVIRO Wiki

Peer Reviewed. Accessible. Written By Experts

The goal of ENVIRO.wiki is to make scientific and engineering research results more accessible to environmental professionals, facilitating the permitting, design and implementation of environmental projects. Articles are written and edited by invited experts (see [Contributors](#)) to summarize current knowledge for the target audience on an array of topics, with cross-linked references to reports and technical literature.

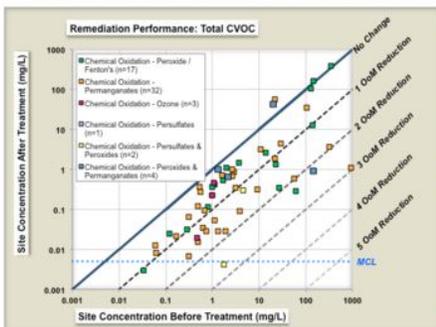
Developed and brought to you by



Your Environmental Information Gateway

[See Table of Contents](#)

Featured article / Chemical Oxidation (In Situ - ISCO)



Chemical Oxidation is an *in situ* remediation technology that can be applied to groundwater or soils and many different contaminants. It is a chemical technology where strong oxidants are injected or mechanically mixed into the treatment zone to promote destructive abiotic degradation reactions. It is commonly used, applicable to many hydrogeologic settings, and relies on well-known technologies such as [injection](#) and [mixing](#). Because of stoichiometry and mass balance limitations, it may be inefficient when applied to treat free-phase (i.e., free-product or non-aqueous phase liquid (NAPL)) zones.

Introduction

In situ chemical oxidation (ISCO) is a mature technology for remediation of contaminated groundwater, including both source zones and contaminant plumes. ISCO involves the introduction of chemical oxidants into the subsurface to react with contaminants to convert

them into less harmful products. Commonly used oxidants include [Fenton's reagent](#), [ozone](#), [potassium permanganate](#), and [sodium persulfate](#). Treatment objectives for ISCO have ranged from reducing contaminant mass within a source zone to meeting maximum contaminant levels (MCLs) in a plume. The effectiveness of ISCO varies as it is highly dependent on proper site characterization, ISCO design considerations, and oxidant delivery system design.

[\(Full article...\)](#)

Enviro Wiki Highlights

SORPTION OF ORGANIC CONTAMINANTS



Batch reactor experiments to generate points on a sorption isotherm

Table of Contents

[Attenuation & Transport Processes](#)

- Advection and Groundwater Flow
- Biodegradation - Hydrocarbons
- Biodegradation - Reductive Processes
- Cometabolism
- Dispersion and Diffusion
- Mobility of Metals and Metalloids
- pH Buffering in Aquifers
- Sorption of Organic Contaminants

[Soil & Groundwater Contaminants](#)

- 1,4-Dioxane
- Chlorinated Solvents
- Metals and Metalloids
- N-nitrosodimethylamine (NDMA)
- Perchlorate
- PFAS
- Polycyclic Aromatic Hydrocarbons (PAHs)
- Trichloropropane (TCP)

[Remediation Technologies](#)

- Anaerobic Bioremediation
 - Design Considerations
 - Design Tool - Base Addition for ERD
 - Emulsified Vegetable Oil (EVO) for Anaerobic Bioremediation
 - Low pH Inhibition of Reductive Dechlorination
 - Secondary Water Quality Impacts
- In Situ Chemical Oxidation (ISCO)
 - Design Considerations

Example Video

- <https://youtu.be/oRZD9MgRb58>



Kinetic Super-Resolution Thermography Diagnostic



The U.S. Army Engineer Research and Development Center, Construction Engineering Research Laboratory (ERDC-CERL), in partnership with Essess Inc., collected thermal data from more than 250 buildings at two demonstration sites: Camp Lejeune, North Carolina, and Scott Air Force Base (AFB) in Illinois.

► **SENSORS ATTACH TO ROOF OF CUSTOMIZED VEHICLE**

Kinetic super-resolution long-wave infrared (KSR LWIR) thermography rapidly scans hundreds of buildings in a short period of time, using sensors attached to the roof of a customized vehicle.

► **RAPIDLY ASSESSED BUILDING INVENTORY**

At Scott AFB, the drive-by process scanned 278 buildings in just under four hours; an individual using a handheld device would have taken almost three weeks to complete this same scan. Data from the KSR LWIR scan is automatically analyzed to show how much energy is leaking out of the building envelope. The drive-by audit cost \$200,000 per installation, more than 76% less expensive than a traditional handheld infrared audit, which would have cost \$840,000 at Camp Lejeune and \$920,000 at Scott AFB.



Technologies Tested

KSR LWIR THERMOGRAPHY

- Multi-sensor roof-mounted rigs scan 100 buildings per hour, calculating building feature temperature and material emissivity.
- System includes multi-spectral IR imaging system, automated building detection capability, onboard data capture, and diagnostics system.
- Multiple data streams recorded simultaneously: LWIR thermal video, near infrared (NIR) video, light detection and ranging (LIDAR), three-dimensional (3-D) point cloud mapping data, Global Positioning System (GPS) vehicle location data, air and ground surface temperature data.
- Video cameras capture 640 x 512 pixels, with a 45°-x-37° field of view (FOV); resolution is 15 times higher than a handheld system.
- System rapidly analyzes and prioritizes multiple buildings for energy conservation measures (ECMs).
- System does not rely on camera operator's capture or analysis skills.

Best suited to:

- Scanning at least 1 million ft² of building inventory.
- Evaluation of building repair, renovation and replacement projects as well as energy performance and compliance.
- Most cost-effective for ASHRAE climate zones 3 and higher.

Limitations:

- Scans only 2 or 3 sides of a building.
- Indoor and outdoor temperatures must have 20° differential to scan.
- Data capture is hindered by visual obstructions—fences, trees, etc.

ABOUT ESTCP

The Environmental Security Technology Certification Program (ESTCP) is the U.S. Department of Defense's environmental technology demonstration and validation program. The program's goal is to identify and assess innovative technologies that address DoD's high-priority environmental requirements efficiently and cost-effectively.

Agenda

- Introduction & Goals
- SERDP & ESTCP: Mission & Structure
- Resources
- Questions
- SERDP's process and proposal guidelines
- Technology Transition
- Questions
- ESTCP's process and proposal guidelines
- Knowledge Quiz
- Questions

Agenda

- Introduction & Goals
- SERDP & ESTCP: Mission & Structure
- Resources
- Questions
- SERDP's process and proposal guidelines
- Technology Transition
- Questions
- ESTCP's process and proposal guidelines
- Knowledge Quiz
- Questions

Presentation Focus

- Technology Maturity is important (not the Program for research)
- Developing the Test Design
 - Using Performance Metrics to gauge success
- DoD Benefit
 - > how many applicable sites and cost savings per site
 - Technology Transfer
 - Validation for multiple scenarios if possible
- DoD Partnerships

ESTCP Goals

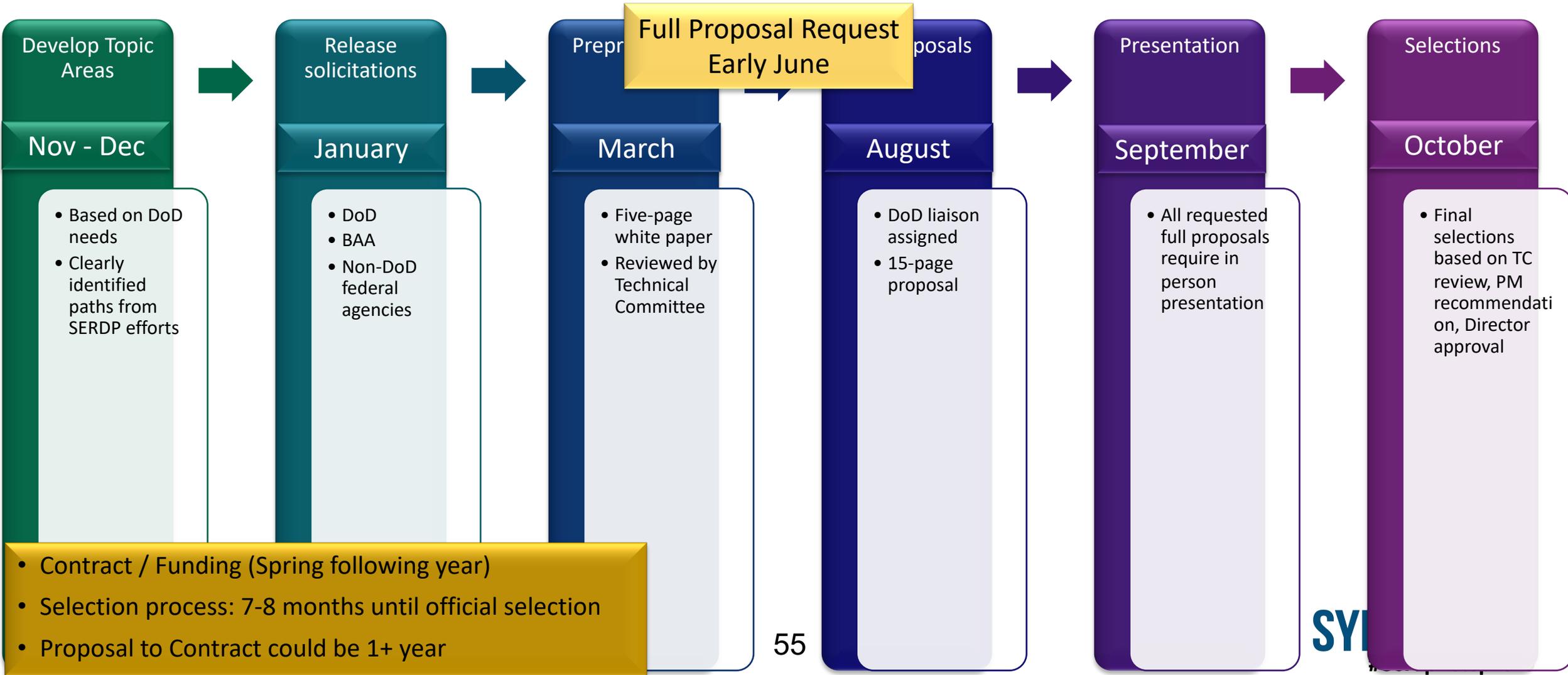
- Different goals from SERDP, even though sister programs
- ESTCP demonstrates and validates (DEM/VAL) promising innovative technologies
- Goal is to enable promising technologies to receive regulatory and end-user acceptance
 - Promotes partnerships amongst accordingly
 - Educate each other
- Technologies are expected to have successfully completed laboratory testing and, when applicable, initial small-scale field testing

Regular Call for Proposals (CFP)

- DoD
- Other Federal Agencies
- BAA (Industry and Academia)



ESTCP Solicitation and Selection Process



ESTCP Proposals

- Preproposal Content
 - Title, Topic Area, Lead Investigator, Lead Organization
 - Problem Statement
 - Technology Demonstration
 - Technical Objective
 - Technology Description
 - Technology Maturity
 - Technical Approach
 - Technical Risks
 - Related Efforts
 - Expected DoD Benefits
 - Schedule of Milestones
 - Technology Transition
 - Performers
 - Funding

- Full Proposal Content
 - Title, Topic Area, Lead Investigator, Lead Organization
 - Problem Statement
 - Technology Demonstration
 - Technical Objective
 - Technology Description
 - Technology Maturity
 - Technical Approach
 - Site description
 - Performance objectives
 - Experimental design
 - Data analyses
 - Technical Risks
 - Related Efforts
 - Expected DoD Benefits
 - Schedule of Milestones
 - Technology Transition
 - Disposition of Equipment
 - Performers
 - Cost Proposal

Pre-Proposals—Getting Your Foot in the Door

Important in the Pre-Proposal

- Relevant Problem Statement
- Technology Maturity
- Cost Benefit of the technology
- Test Design
- Performance Metrics
- Transition Potential

Relevant Problem Statement

- Clearly state the environmental problem that the technology addresses and its relevance and importance to DoD
- Identify the current approach (if one exists) to this problem and its shortcomings
- Don't dwell on Problem Statement, just identify it
- Not an opportunity for personal sites' problems
- Examples:
 - *Low BOD levels (<100 mg/L) in greywater , and other compounds such as pharmaceuticals and personal care products are not amenable to rapid biotic degradation (Leal et al., 2010; Elmitwalli et al., 2007).*
 - *Current technologies have potential for reducing contaminant concentrations in low-permeability zones, but do not reduce stored mass sufficiently.*
 - *DoD currently holds liability for >400 PFAS contaminated sites.*

Quiz on Problem Statement

Please select all that are true (raise your hand if you think it's true)

 The problem statement deals with the specific DoD environmental issue that the proposal addresses

If there's an existing technology that can mitigate damage to an extent, then there's no problem statement

A problem statement is optional in the required format

The problem statement deals with that specific site that you're familiar with and would love to use as a test bed

Technology Maturity

- 6.3-6.4 Testing and Evaluation Funds
- Provide evidence that the technology is mature enough
 - Past Treatability Studies
 - Are bench scale evaluations ok?
 - Are commercially available technologies ok?
- Include references and past funding history.
- Discuss any development or design work that is required prior to demonstration and who's paying for it

Quiz on Technology Maturity

True or False

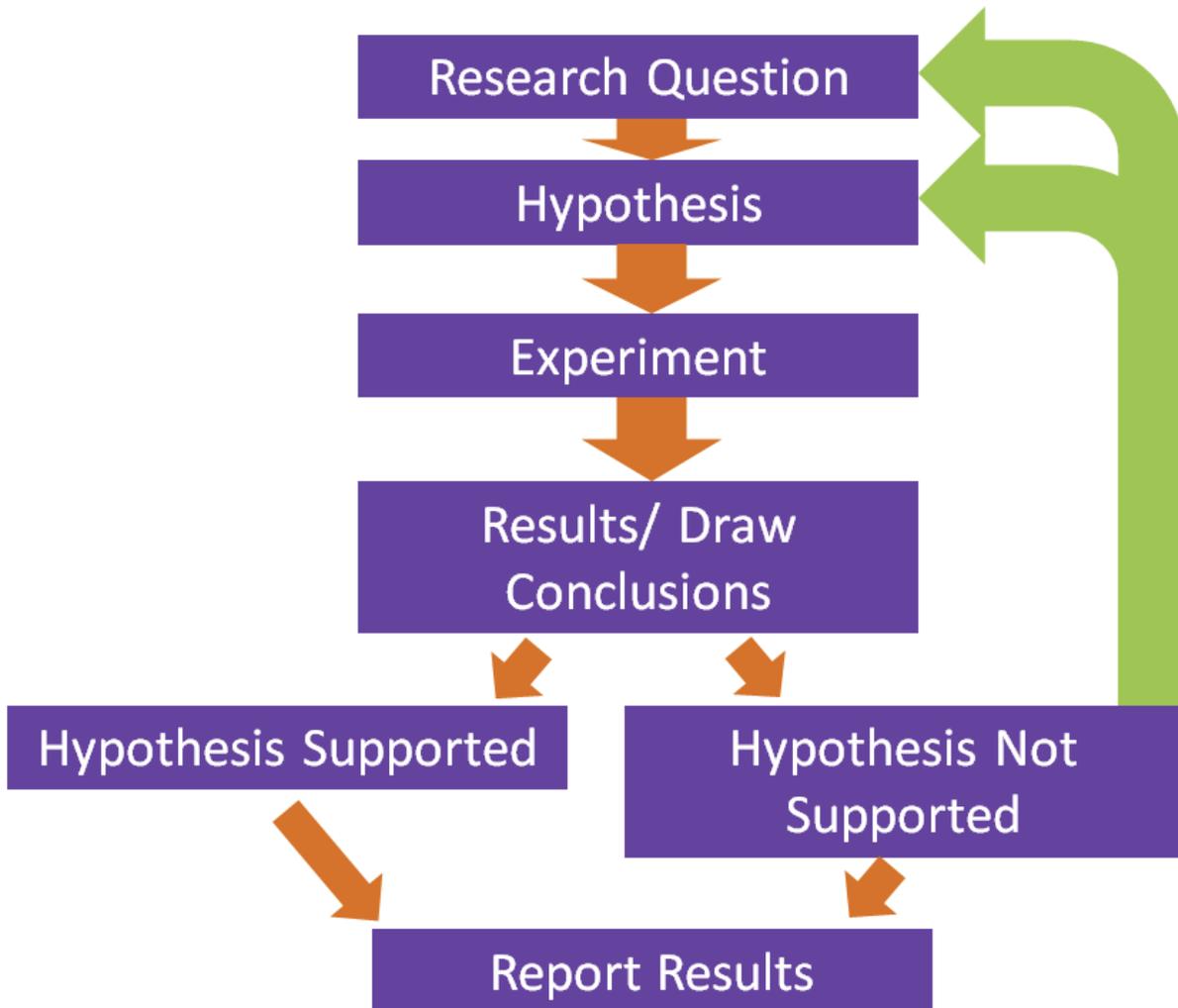
Laboratory research is permitted in an ESTCP project as long as you need to find out how the system really operates

T Bench Scale Lab work is permitted if needed to optimize operating conditions under the particular site's scenario

Prior work performed by the proposer on the topic does not count towards Technology Maturity

Referencing others' work is not permissible in a proposal

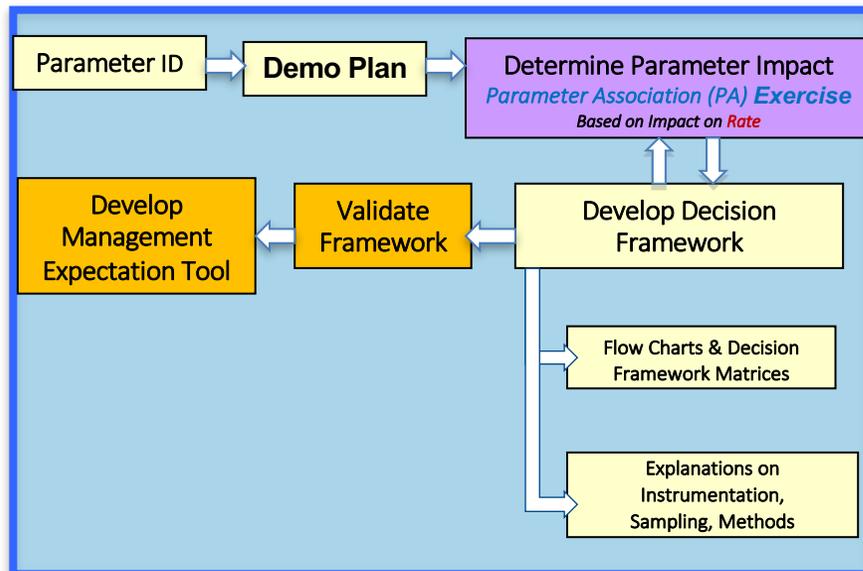
Technical Approach v. The Scientific Method



- Research Question = DoD Need, Claim being validated
- Hypothesis = Test Design
- Experiments = Validation of the hypotheses, including controls and varied parameters
- Results = Reports and Technology Transfer

Technical Approach

- Logical **Test Design** in terms of specific tasks
- Discusses controls, sampling protocols, operational phases, and means to evaluate performance, i.e., **performance metrics**
- Describes data to be collected and analyzed



Performance Objective	Data Requirements	Success Criteria
Quantitative Performance Objectives		
Determine remediation effectiveness	Pre- and post-treatment contaminant concentrations in soil and groundwater	<ul style="list-style-type: none"> • >90% reduction considered successful • Student t-test or ANOVA for statistical analysis
Analytical field sensitivity	Matrix-specific field samples	Concentrations between 2x-5x reporting limit are detected
Qualitative Performance Objectives		
Ease of use	Feedback from field technician on usability of technology and time required	A single field technician able to effectively take measurements

Performance Objectives in the Test Design

- The primary criteria established by the investigator for evaluating the performance and costs of the technology
- These should include, but are not limited to, such things as end-point criteria, remediation time, analytical sensitivity, destruction rate
- May be qualitative or quantitative parameters.

Performance Objective	Data Requirements	Success Criteria
Quantitative Performance Objectives		
Determine remediation effectiveness	Pre- and post-treatment contaminant concentrations in soil and groundwater	<ul style="list-style-type: none"> • >90% reduction considered successful • Student t-test or ANOVA for statistical analysis
Analytical field sensitivity	Matrix-specific field samples	Concentrations between 2x-5x reporting limit are detected
Qualitative Performance Objectives		
Ease of use	Feedback from field technician on usability of technology and time required	A single field technician able to effectively take measurements

Example Performance Objectives

Performance Objective	Data Requirements	Success Criteria
Quantitative Performance Objectives		
Determine remediation effectiveness	Pre- and post-treatment contaminant concentrations in soil and groundwater	<ul style="list-style-type: none">• >90% reduction considered successful• Student t-test or ANOVA for statistical analysis
Analytical field sensitivity	Matrix-specific field samples	Concentrations between 2x-5x reporting limit are detected
Qualitative Performance Objectives		
Ease of use	Feedback from field technician	A single field technician able to do

SERDP and ESTCP harness the latest science and technology to develop and demonstrate innovative, cost-effective, and sustainable solutions to meet DoD's environmental challenges.



The 2019 Symposium is coming up! Visit the [Symposium website](#) to register.

SERDP Solicitations

 Investing in environmental research and development. **FY 2021 SERDP Solicitation was released October 24, 2019.**

→ [FY 2021 SERDP Solicitation](#); Pre-proposals are due January 7, 2020.

ESTCP Solicitations

 Demonstrating innovative environmental technologies. **FY 2020 Supplemental Solicitation was released October 17, 2019.**

→ [Supplemental Solicitation](#); Proposals are due November 21, 2019.

Subscribe to the Mailing List

Stay up to date on SERDP and ESTCP announcements

Twitter

Follow



Visit the Symposium website for more information and to register!

The room block is now closed. Please call the Marriott Wardman Park Hotel at 202-328-2000 to see if rooms are still available under the SERDP and ESTP Symposium room block.



SERDP • ESTCP
SYMPOSIUM

- SERDP Resources
- ESTCP Resources
- Improved Sampling from Subsurface
- Symposium Sessions: WP Program Area Topics
- Symposium Sessions: UXOs in Underwater Environments
- SERDP FY 2021 Solicitations Released
- Symposium Sessions: Energy Resilience & Efficient Tech

Upcoming Events

- Dec 3-5 [SERDP and ESTCP Symposium 2019](#)
- Dec 12 [Webinar: Monitoring and Remediating Groundwater Contaminated with Chlorinated Solvents](#)
- Jan 7 [FY 2021 SERDP Core Pre-Proposals Due](#)
- Jan 16 [Webinar: Battery Energy Storage Modelling](#)

[Calendar of Events](#)

News

- [SERDP Solicits Proposals for FY 2021 Funding](#) - Posted 10/24
- [ESTCP Releases Supplemental FY 2020 Solicitation](#) - Posted 10/17
- [SERDP and ESTCP Release Supplemental FY 2020 Solicitations](#) - Posted 8/1

[More News](#)

Webinar Series

Promoting the transfer of innovative, cost-effective and sustainable solutions.

[View Webinar Schedule](#)

Tools and Training

Put innovative research and technologies to work.

[Access Tools & Training](#)

Blog

Posts highlighting research, technologies, and tools.

[Browse Blog](#)

Investigator Resources

SERDP Resources

ESTCP Resources

[Management Reports](#)[Demonstration Plans](#)[Technical Reports](#)[Required Presentations](#)[Home](#) > [Investigator Resources](#) > [ESTCP Resources](#) **PRINT**

ESTCP Resources



ESTCP projects are formal demonstrations in which an innovative technology or methodology is rigorously evaluated on a Department of Defense site or platform to promote future implementation. The requirements for ESTCP investigators are:

- [Management Reports](#)
- [Demonstration Plans](#)
- [Technical Reports](#)
- [Required Presentations](#)

For use in proposals or as otherwise requested, refer to this [Sample Gantt Chart](#).

For EW projects, use this [Installation Check List](#) to estimate the costs incurred by the military installation to host the ESTCP demonstration.

[Download SERDP and ESTCP Logos](#)

Project Reporting

Access the SERDP and ESTCP Management System (SEMS)

[Login to SEMS](#)

Calendar

Schedule of events, solicitation deadlines, and training opportunities.

[View Calendar](#)

Agenda

- Introduction & Goals
- SERDP & ESTCP: Mission & Structure
- Resources
- Questions
- SERDP's process and proposal guidelines
- Technology Transition
- Questions
- ESTCP's process and proposal guidelines
- Knowledge Quiz
- Questions

Qualitative Performance Objectives **Practice Exercise**

Select most appropriate/s Qualitative Performance Objective

- ✓ Ability to work in fractured bedrock.
- ✓ Ability to yield non-toxic by and end- products
- ✓ Ability to be mounted in a small truck.
- ⊘ Must look pretty
- ✓ Must be an off the shelf technology

Quantitative Performance Objectives **Practice Exercise**

Select most appropriate/s Quantitative Performance Objective



Ability to drill deep and work in the hot desert



Reductions of 99.9 to 99.99% for total and leachable concentrations in groundwater



System must have the ability to reach temperatures of 600°C



>99% removal of PFOS, PFOA, and other PFAS on the USEPA Method 537/DoD QSM analyte list



Post treatment Soil concentrations and leachate concentrations < regional screening levels



Post-treatment water concentrations < USEPA Health Advisory Level (HAL)

Quiz on Test Design and Performance Metrics

Which are True Statements?

- T** Test Design is typically presented as a series of tasks addressing a hypotheses
- Test Design does not need to be spelled out unless your proposal is selected for funding
- Establishing Performance Objectives is optional
- Performance Objectives are established by ESTCP, not the PI

Technical Risks and Related Efforts

- Risks:
 - Identify potential concerns in taking the technology from the research phase to the proposed scale of the demonstration
- Related Efforts:
 - Provide information on any relationship to other similar projects
 - Your own or otherwise
 - Search www.serdp-estcp.org for similar projects already ongoing and establish the difference between what you're proposing and what's already funded

Department of Defense (DoD) Benefit

- *Describe the expected benefit in terms of environmental impact and/or reduced cost.*
- What type of sites / conditions is the technology applicable to?
- Can it be used to retrofit existing systems? Savings?
- Is the demonstration assessing performance at > 1 type of site
 - If not, can you increase benefit by estimating performance at other sites; i.e., using analytical / numerical models, or treatability tests?
- Does the Technology Transition plan ensure that the knowledge transfers to the users' hands

DoD Partnerships

- ESTCP Goal is *“to enable promising technologies to receive regulatory and end-user acceptance and be fielded and commercialized more rapidly”*
- Partnerships academia, consultants, regulators and DoD RPMs are critical to understand technology limitations, user needs and hurdles in regulatory acceptance
 - Educate each other



Key Points / Hints

- For ESTCP it is critical that the technology is mature
- Technical Approach (includes Test Design, Performance Metrics, Risks, and Related Efforts) is at the crux of the proposal and heavy weight in Technical Merit
- DoD Benefit is $>$ payback period and the lifecycle cost
 - Technology Transfer Mechanisms
 - Validation for multiple scenarios if possible
- Partnerships; i.e., DoD, Academia, Regulators, Consultants

Agenda

- Introduction & Goals
- SERDP & ESTCP: Mission & Structure
- Resources
- Questions
- SERDP's process and proposal guidelines
- Technology Transition
- Questions
- ESTCP's process and proposal guidelines
- Knowledge Quiz
- Questions