

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

FY 2023 STATEMENT OF NEED

Environmental Restoration (ER) Program Area

**IMPROVED MANAGEMENT OF STORMWATER IMPACTS AT
DEPARTMENT OF DEFENSE FACILITIES**

1. Objective of Proposed Work

The objective of this Statement of Need (SON) is to improve management of impacted stormwater emanating from Department of Defense (DoD) facilities adjacent to waterways. The primary concern is the management of per- and polyfluoroalkyl substance (PFAS)-impacted runoff or infiltration to groundwater from historic aqueous film-forming foam (AFFF) use. Specific objectives include:

- Develop cost-effective active treatment technologies to treat chemicals of concern (COCS) in stormwater that will effectively handle varying flows and complex stormwater mixtures of varying dissolved organic carbon (DOC) content.
- Develop passive treatment technologies that will remove COCs from stormwater and can accommodate variable flows (base and peak flow of a 2-year storm). Of particular interest are technologies that are designed to function in place over the long term with minimal maintenance, as well as allow for efficient and safe replacement of passive media.
- Develop innovative stormwater control and treatment technologies that improve stormwater management through prevention of sediment recontamination and addition to the existing water supply.
- Methods for assessing and determining background PFAS concentrations in discharge waters at DoD facilities.

Proposers may address one or more of the objectives. Research proposals can involve laboratory-, bench-, and/or field-scale studies. All proposals will be closely evaluated as to how the research may ultimately be used to improve stormwater management. Proposers should clearly state the PFAS that will be addressed. Other COCs may be included for study, but the rationale for additional COCs must be provided and such proposals should address PFAS and the additional COCs. Proposers should clearly delineate how new technologies differ and improve upon current practices.

All analytical work must follow [Draft Method 1633 \(Analysis of Per- and Polyfluoroalkyl Substances \(PFAS\) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS\)](#).

2. Expected Benefits of Proposed Work

Research should lead to improved management of PFAS in stormwater and discharge to fresh or saltwater bodies. The resulting tools and understanding should improve the ability to implement effective remedial strategies at DoD sites.

3. Background

SERDP is actively engaged in research on the management of PFAS in groundwater and surface waters that occur on DoD sites ([SERDP & ESTCP Efforts on PFAS](#)). Discharge of PFAS-impacted stormwater has led to increased regulatory concern due to impacts from historic AFFF usage or issues related to intrusion and infiltration of impacted groundwater into stormwater systems.

Many facilities use best management practices (BMPs) that include passive treatment, as well as more active treatment of stormwater held in retention basins. While as yet there are no federal ambient acute or chronic water quality criteria associated with PFAS, stormwater events can include discharge(s) that contain high volumes with low PFAS concentrations. Commonly used technologies for stormwater treatment are often not effective for PFAS removal; how to reduce these PFAS loads, at least in the near future, to levels below the EPA's health advisory limit of 70 ppt, is of increasing concern.

4. Cost and Duration of Proposed Work

The cost and time to meet the requirements of this SON are at the discretion of the proposer. Two options are available:

Standard Proposals: These proposals describe a complete research effort. The proposer should incorporate the appropriate time, schedule, and cost requirements to accomplish the scope of work proposed. SERDP projects normally run from two to five years in length and vary considerably in cost consistent with the scope of the effort. It is expected that most proposals will fall into this category.

Limited Scope Proposals: Proposers with innovative approaches to the SON that entail high technical risk or have minimal supporting data may submit a Limited Scope Proposal for funding up to \$250,000 and approximately one year in duration. Such proposals may be eligible for follow-on funding if they result in a successful initial project. The objective of these proposals should be to acquire the data necessary to demonstrate proof-of-concept or reduction of risk that will lead to development of a future Standard Proposal. Proposers should submit Limited Scope Proposals in accordance with the SERDP Core Solicitation instructions and deadlines.

5. Point of Contact

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For Core proposal submission due dates, instructions, and additional solicitation information, visit the [SERDP website](#).