

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

FY 2023 STATEMENT OF NEED

Environmental Restoration (ER) Program Area

**IMPROVED UNDERSTANDING OF CONCRETE AND ASPHALT
IMPACTED BY HISTORICAL RELEASES OF AFFF**

1. Objective of Proposed Work

The objective of this Statement of Need (SON) is to improve the understanding and management of concrete and asphalt construction materials impacted by historical releases of aqueous film-forming foam (AFFF) containing per- and polyfluoroalkyl substances (PFAS). Specific objectives include:

- Assessment of the leaching potential of PFAS from historically impacted concrete or asphalt either through surface run-off or leaching through impacted materials to soils and groundwater.
- Determination of the magnitude of PFAS loading to the environment from impacted concrete and asphalt.
- Development of methodologies or technologies for in-place management of impacted concrete and asphalt.
- Assessment of the potential for beneficial re-use of impacted materials.

Proposers may address one or more of the objectives. Research proposals can involve laboratory-, bench-, and/or field-scale studies. Construction materials of interest include concrete and asphalt; proposals must specify which material will be assessed, although the preference is for both materials to be included in proposed efforts.

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 concrete and asphalt that have been impacted by historic use of AFFF. The resulting tools and understanding should improve the ability to implement effective management strategies at Department of Defense (DoD) sites and mitigate environmental impact.

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](#)). A key component of this research is developing a thorough understanding of PFAS sources and their potential contribution to PFAS loading to surface waters and groundwater.

Both the DoD and the commercial sector are responsible for areas such as hangars, runways, and training areas where AFFF was applied or spilled onto concrete or asphalt. At some sites, these materials have already been removed and are stockpiled pending characterization and determination of a management option. Future replacements of such materials are also expected. Concrete or asphalt may be shipped for disposal as hazardous waste, but long-term management in this manner is not economically viable. Current understanding of the overall environmental impact of PFAS in these materials is limited, thus limiting management options.

In addition to understanding the fate and transport of PFAS emanating from in-place material, concrete and asphalt are often recycled through repaving or re-use. Material may be crushed and reused for new concrete, or utilized for base material under a new road or runway. With limited information about the fate and transport potential of PFAS in these matrices, such recycling may not be feasible.

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

Herb Nelson, Ph.D.

Director

Strategic Environmental Research and Development Program (SERDP)

4800 Mark Center Drive, Suite 16F16

Alexandria, VA 22350

Phone: 571-372-6400

E-mail: Herbert.H.Nelson10.civ@mail.mil

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