Workshop on Research and Development Needs for Long-Term Management of Contaminated Sediments

August 9 - 10, 2016
4735 E Marginal Way S
Seattle, WA 98134

Background: The Strategic Environmental Research and Development Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP) are the Department of Defense's (DoD) environmental research programs, harnessing the latest science and technology to improve DoD's environmental performance, reduce costs, and enhance and sustain mission capabilities. They fund basic and applied research as well as field demonstration and validation efforts. For additional information, refer to www.serdp-estcp.org.

Sediment contamination remains a significant liability for DoD. In particular, the Navy has 500 sediment sites, with an estimated cost-to-complete of over $800M. Contaminants at these sites include a wide variety of compounds; polychlorinated biphenyls, polycyclic aromatic hydrocarbons, various metals and metalloids, and military-unique compounds such as munitions constituents. Most of these contaminants tend to sorb and remain in the sediment long-term, resulting in a persistent contamination source to environmental receptors. Environmental restoration and closure of these contaminated sites is a top DoD priority.

Sound science and effective tools that are accepted by the regulatory community are needed to characterize, remediate, manage, and monitor these sites in a manner that reduces risks. Since 1996, SERDP and ESTCP have supported research and demonstration strategies for sediment characterization, site restoration and long-term monitoring to support DoD restoration goals. SERDP and ESTCP investments in this area are guided by the results of three workshops convened to examine the state of the science and engineering and to identify and prioritize research needs. In 2004 an *Expert Panel Workshop on Research and Development Needs for the In Situ Management of Contaminated Sediments* identified 75 specific research needs. In 2008 an *Expert Panel Workshop on Research and Development Needs for Understanding and Assessing the Bioavailability of Contaminants in Soils and Sediments* was held to discuss in greater detail the issue of contaminant bioavailability.

The most recent planning meeting occurred in a 2012 workshop, *Expert Panel Workshop on Research and Development Needs for Long-Term Management of Contaminated Sediments*.The objective of this workshop was to summarize the state of work conducted by SERDP and ESTCP to date, review where DoD facilities are in their long-term management implementation of contaminated sediments, and learn directly from the Remedial Program Managers (RPMs) specific tools, demonstration, or information-transfer needs that will facilitate both long-term management decision making and long-term monitoring of these sites.

An update to the planning process will occur with this 2016 meeting in Seattle to address changing DoD sediment site management priorities. In achieving site closure, these sites will be completing feasibility studies, designing and implementing remedies, or be engaged in the long-term monitoring of the success of those implemented alternatives. Any new investigation work will largely be associated with identifying recontamination sources within the local and regional watersheds, and with emerging contaminants.

Objective: SERDP and ESTCP will host the workshop to guide investment strategies over the next five years to optimize research and demonstration projects that support DoD's restoration goals. The objective of this workshop is to summarize the state of work conducted by the Programs to date, review where DoD facilities are in their restoration implementation, and learn directly from the RPMs what specific tools, demonstration, or information transfer needs they have that will facilitate both restoration decision making and long-term monitoring of these sites. To that end, this workshop will (1) examine the current state of the science and technology for the restoration of contaminated sediment sites, (2) review the current and projected future status of DoD restoration activities, (3) identify data gaps that, if addressed, could aid in the restoration of contaminated sediments, and (4) prioritize research and demonstration opportunities to help facilitate regulatory and public acceptance of restoration of contaminated sediment sites.

Preliminary focus topics for discussion during the breakout sessions are provided below. Additional questions may be formulated based upon the pre-workshop list of key issues and high-priority research and demonstration needs from the participants.

1. What innovative tools, methodologies or technologies could be developed to prevent or minimize the potential of storm water discharges from recontaminating remediated sediment sites?
2. What research and/or technology demonstrations can be done to facilitate the overlap between cleanup actions and navigation dredging? Are there synergies in terms of siting, design, long-term monitoring, sustainability, and public acceptance of sediment management and/or disposal?
3. Are there emerging contaminants in sediments for which additional research and/or guidance documents may be needed to support risk assessment and remedial decisions?
4. Are there new tools and/or technologies that can be developed to support increased confidence in sediment remedial action levels that are based on either fish tissue values (human health consumption risks) and/or regional background concentrations?
5. Are there new tools and/or approaches to support assessment of remedy effectiveness. This would include both short and long-term assessment methods, metrics, and guidance to characterize, monitor, and maintain success following remediation at contaminated sediment sites?

Approach: Scheduled for August 9 - 10, 2016 in Seattle, WA, the 2-day workshop will consist of a limited number of formal presentations describing the scope of the problem and directed discussions on the state of the science, followed by sessions focused on determining data gaps. Prior to the workshop, participants will be asked to submit a list of key issues and high-priority research and demonstration needs that, if addressed, can reduce or eliminate the barriers and limitations to achieving remedy decisions, implementing emergent remedial technologies, regulatory acceptance of the current technologies, and long-term remedial monitoring tools and strategies.

Attendees: To maximize productivity at the workshop, the number of invited attendees is approximately 40. Attendees include DoD and EPA remedial project managers, state remedial program leads, university and industry scientists, as well as other key invited experts.

Products: This meeting will provide (1) a critical review of the state of the science and technology for the treatment and management of contaminated sediments and (2) a summary and prioritization of the remaining uncertainties that will benefit in future research and demonstration opportunities. Findings will be summarized in a final report that will serve as a strategic plan to guide future SERDP and ESTCP investments.