

SPRING/SUMMER 2016



NESDI NEWS

Highlights & Happenings

INSIDE THIS ISSUE:

FY17 Needs Solicitation Process	4
New Project Initiatives	5
IPR Held Aboard Washington Navy Yard	7



Welcome!

This quarterly update provides you with the latest information about program operations, significant accomplishments, and future focus areas for the Navy Environmental Sustainability Development to Integration (NESDI) program. We hope you will find these insights useful and that they encourage you to participate (or increase your involvement) in the program over the coming months.

Who We Are

The NESDI program is the Navy's environmental research and development demonstration and validation (6.4) program, sponsored by the Chief of Naval Operations Energy and Environmental Readiness Division (OPNAV N45) and managed by the Naval Facilities Engineering Command (NAVFAC) from the Engineering and Expeditionary Warfare Center (EXWC) in Port Hueneme, CA. The mission of the program is to provide solutions by demonstrating, validating, and integrating innovative technologies, processes, materials, and by filling knowledge gaps to minimize operational environmental risks, constraints, and costs while ensuring Fleet readiness.



The NESDI Program: Integrating Green Technologies Into the Fleet



From the Program Manager's Desk

Welcome to the spring/summer 2016 issue of *NESDI News: Highlights & Happenings*—part of our ongoing effort to keep you informed about the NESDI program.



Ken Kaempffe
Program Manager

I'd like to start off by welcoming Karla Harre to our management committee—the Technology Development Working Group (TDWG). Karla comes to us from EXWC and brings

with her much-needed expertise about the operation of the Navy's Environmental Restoration Program. Welcome Karla!

At the same time, we must say goodbye to Bill Venable—one of our NAVFAC TDWG representatives—who leaves us to take on additional management responsibilities at EXWC. Bill was a valued member of the TDWG who brought with him installation experience as former director of the environmental program at Naval Base Ventura County, Point Mugu. We thank Bill for his service to the NESDI program and wish him well on his new assignment.

The TDWG and I have been busy screening and evaluating the full proposals that were received to address the priority needs collected via our fiscal year (FY) 2016 needs solicitation process. More information about the results of our full proposal review are included in the following section.

Another major milestone on our schedule is the execution of our needs solicitation process for FY17. Although you can submit a need at any time, our formal needs collection process runs this year from 1 June until 3 August. (See the "FY17 Needs Solicitation Process" section in this issue of *NESDI News* for more insights.) So if you want to submit a need for consideration as part of our FY17 solicitation, you'll have to hurry.


Ken Kaempffe
ken.kaempffe@navy.mil

FY16 Full Proposal Screening & Ranking

The next significant milestone on the NESDI program schedule is the review of full proposals requested from the 41 pre-proposals we received. Full proposals were requested for those pre-proposals that do the best job of meeting the evaluation criteria and addressing the explicit requirements stated in the targeted need. The following 25 full proposals are in the process of being reviewed, evaluated and ranked by the TDWG:

No.	ID	Full Proposal Title
1.	163	Validation Testing of an Optional, Large Scale Sustainable Liquid Propane Fast Cook-off Burner
2.	164	Superhydrophobic Coating for Corrosion Prevention and Leachate Impedance
3.	165	Forward Looking Infrared (FLIR) for Advanced Discharge Characterization
4.	166	Smart Electronic Tools for Navy Environmental Compliance Monitoring and Reporting
5.	167	Zinc-free Inorganic Primer Coatings for Active Corrosion Protection
6.	168	Microfluidic Paper-based Sampling and Capillary Electrophoresis Detection for Rapid Preconcentration/Separation of Insensitive Munitions Explosives
7.	169	Utility Vault Water Treatment
8.	170	Hexavalent Chromium Reduction Technology at Navy Fleet Readiness Centers
9.	171	Naval Air Systems Command Solutions for Engine Washing
10.	172	Preventative Management of Contaminated Silt
11.	173	Plasma Enhanced Melter (PEM) to Reduce Hazardous Wastes and Generate Energy
12.	174	Stable Carbon Isotopes for Tracing in situ RDX Remediation
13.	175	Stable-Isotope Labeled Tracers, an Innovative Way to Validate Natural Attenuation of RDX in Groundwater
14.	176	In Situ Treatment of 1,4-Dioxane using Enhanced Biodegradation
15.	177	National Pollutant Discharge Elimination System Copper Effluent Control System
16.	178	Background Analysis and Tracer Study to Identify Metal Contaminant Source Contributions to Stormwater Runoff
17.	179	Demonstration of Improved Toxicity Methodology to Link Stormwater Discharges to Receiving Water Impacts at Navy Sites
18.	180	Sewer Gas Elimination Technology
19.	181	Industrial Pier Area Testing of Best Stormwater Pollutant Reduction Measures
20.	182	Demonstrate and Validate Acceptable Ground Support Equipment Primers
21.	183	Demonstration of Optimized non-NMP (n-Methyl-2-pyrrolidone) Solvents for Immersion Chemical Depaint
22.	184	Technologies, Process Knowledge & Capabilities that Increase Waste Plastics Diversion
23.	185	A Comprehensive Analysis and Strategy for Contaminated Sediment Management
24.	186	Impact of Sediment Resuspension by Propeller Wash and Shore Sediment Dynamics on Remediation Options
25.	187	A Methodology for Assessment and Removal of Storm Conveyance and Intertidal Zone Polychlorinated Biphenyls



FY17 Needs Solicitation Process

Our formal needs collection process for FY17 runs from 1 June until 3 August. The NESDI program defines a “need” as requirement to eliminate or reduce an environmental constraint that:

1. Addresses a Fleet operational challenge
2. Identifies an existing gap in knowledge, technology, and/or capability
3. Is associated with an environmental constraint or regulatory driver

When submitting a need, we encourage you to provide as much information as you can about your issue. What is the problem? How big is it? What’s the basis of the problem? Is it due to a current or impending regulatory requirement that now makes your job more difficult? Is it a technology gap? Is it a fleet operational challenge? Is the problem unique to your facility or is it applicable across the Navy?

To submit your need, visit the “Needs” section on the NESDI web site (at www.nesdi.navy.mil/Needs.aspx) then click on the “Submit Your Need Now” button. This will take you to the “NESDI Environmental Needs Submission Form.”

Use this on-line form to tell us everything you can about your need. Then click on the “Submit Need” button to complete the process.

Once you submit your need, technical experts assembled by NESDI program management will assess, validate, and rank it. You will be notified about the ultimate status of your need once this ranking process is complete. If you submitted a need in a previous year and it is still a valid need, please resubmit it via our web site and provide any updated information you may have.

For more information, download our *Reference Guide: Submitting and Evaluating Needs* by visiting the NESDI web site at www.nesdi.mil then clicking on the “Needs” banner and then clicking on the “reference guide” hyperlink. Any other questions about the use of our web site can be directed to Eric Rasmussen, our webmaster, at 732-323-7481 and eric.rasmussen@navy.mil.



New Project Initiatives

In this section of *NESDI News*, we introduce you to another of our FY16 “new start” projects—project no. 520 (Quantification of Polychlorinated Biphenyls Paint Volatilization). This project is investigating the volatilization rate of paint containing polychlorinated biphenyls to generate a defensible, environmentally and fiscally responsible work process for the removal of paints containing these compounds during shipbreaking operations.

Ensuring the Safe Removal of Legacy Paints During Shipbreaking

The use and manufacture of paint containing polychlorinated biphenyls (PCB) has been prohibited for decades. Some Navy ships still have PCB-containing paint that was applied before the use of this type of paint was prohibited. Because PCBs are known to become volatile (airborne) when heated, special measures must be taken when these ships arrive at the shipyard for welding and cutting operations. Current procedure requires the removal of PCB-containing paint up to a radius of 24 inches when performing work that has the potential to heat the steel in excess of 200 degrees Fahrenheit.

However, there is a lack of data showing the quantity of specific PCB components volatilized as a function of temperature, and these controls may well be over-conservative.

This 24-inch removal requirement results in increases in time and cost to perform the required work, and generates a large volume of waste that needs to be safely disposed of. Additionally, the risk of safety issues for employees, as well as injuries from chronic exposure to noise and vibration, is elevated.

Currently, this problem is of great importance at Puget Sound Naval Shipyard & Intermediate Maintenance Facility (PSNS&IMF) due to the large volume of current and planned inactivation and recycling of Navy vessels. Other shipyards and maintenance facilities performing work on ships with legacy paint systems could also be impacted.

(continued)



This NESDI project will investigate the volatilization rate of PCB-containing legacy paints on Navy ships. (U.S. Navy photo by Mass

Communication Specialist Seaman Apprentice Robert Robbins)



New Project Initiatives *(continued)*

This project will investigate the volatilization rate of paint containing PCBs in order to generate a defensible, environmentally and fiscally responsible work process for the removal of paints containing these compounds during shipbreaking operations.

The team will perform a thorough quantification study to relate steel temperature to volatilization of PCBs within various paint systems.

The team will perform a thorough quantification study to relate steel temperature to volatilization of PCBs within various paint systems. The study is based on standard U.S. Environmental Protection Agency (EPA) test methods, and will be carried out by accredited laboratory facilities. Samples of PCB-containing paint will be taken from a ship at PSNS&IMF and heated to a range of temperatures up to 400 degrees Fahrenheit in a controlled environment. The vapor phase during this heating process will be collected on low-volume polyurethane foam (PUF) in accordance with EPA method TO-10A. This vapor phase testing will be conducted by scientists at Naval Air Warfare Center China Lake, and the resulting PCB-bearing PUF samples will be sent to an outside



Some older Navy ships have been painted with PCB-containing coatings. (U.S. Navy photo by Wendy Hallmark)

laboratory competent in PCB extraction and analysis. The results of this analysis will show the total loading of PCBs resulting from exposure at different temperature levels. These data can then be correlated to available steel heating profiles developed at PSNS&IMF, enabling informed decision making, and the appropriate modification of current work processes.

The final product of this demonstration will be a work process that relates the paint removal requirements with paint type, thickness, and task to be completed. This process will be based on a statistically valid

correlation of the loading of PCBs released into the atmosphere as a result of heating the paint to various temperatures corresponding with cutting and welding operations. The process will be gathered into a final report and posted to the NESDI and other web sites for other shipyards and maintenance facilities to utilize.

Principal Investigator:

Patrick Morrow

Naval Surface Warfare Center
Carderock Division
301-227-5176
patrick.r.morrow@navy.mil



IPR Held Aboard Washington Navy Yard

Each year, the NESDI program holds IPRs to check in on the progress made by the program's Principal Investigators and make sure that their efforts will achieve the intended results. These annual reviews bring together end users, resource sponsor representatives, and researchers—shrinking the gap between the research and required integration efforts. Each year, dozens of participants attend or dial in to hear briefings about ongoing projects and to provide valuable feedback to the program's Principal Investigators.



TDWG members tour NHHC's underwater archeology laboratory aboard the Washington Navy Yard in advance of the program's May 2016 east coast IPR. On display were several items in various stages of preservation including a trumpet recovered from the World War II cruiser USS Houston and a rare Howell Torpedo that was embedded in the ocean floor for more than 100 years. (Photos by Pat Earley)

At our east coast IPR held in early May, NESDI Principal Investigators highlighted their ongoing efforts to address the persistent and difficult environmental issues facing the Navy. Nearly four dozen attendees from 17 different organizations participated in our east coast IPR either in person or over the phone to hear the latest information on a number of our ongoing projects. Prior to the start of the east coast IPR, members of the TDWG also toured the Naval History and Heritage Command's (NHHC) underwater archeology laboratory. The Underwater Archeology Branch (UAB) manages a database and preserves and studies recovered artifacts associated with more than 3,000 shipwrecks and 14,000 sunken aircraft worldwide.




Final attendance lists and agendas for both 2016 NESDI IPRs are available by contacting Cindy Webber at cynthia.webber@navy.mil or 760-939-2060.

Planning is already underway to hold our 2017 east coast IPR in March at the Fleet Readiness Center Southeast in Jacksonville, FL and our 2017 west coast IPR in May at the Naval Postgraduate School, Monterey, CA. More information will be provided in subsequent issues of *NESDI News*.



The Latest Project Fact Sheets On-line



**Integrating Green
Technologies
into the Fleet**

Navy Environmental Sustainability Development to Integration (NESDI) Program

[HOME](#)
[PROGRAM DETAILS](#)
[NEEDS](#)
[PRE-PROPOSALS](#)
[PROJECTS](#)
[NESDI NEWS](#)
[LOGIN](#)

Current Projects: Define your filter and sort criteria, then click 'Go'

ID: Status: Key Word/Phrase Search: More Information: Sort: Desc Rows:

[Export](#) Results - 231 projects Pg 1 of 10 Prev << Next >>

ID	Project Title	Status	Objective	More Information
528	Impacts of Water Conservation Measures on Potential Safe Drinking Water Act Violations in Navy Water Supply Systems	Active Project	This project will study the potential impact of water conservation efforts on Navy drinking water supply systems including how those systems may be impacted by dramatic reductions in water consumption. In certain instances, these reductions can cause water to remain in distribution and storage systems for excessive periods of time that may lead to violations of the Safe Drinking Water Act (SDWA).	Fact Sheet
527	Structure-function Relationship and Environmental Behavior of Per- and Polyfluorochemicals from Aqueous Film-forming Foams	Active Project	This project will provide environmental restoration (ER) managers and Remedial Project Managers (RPM) with better tools for building accurate conceptual site models to better manage sites impacted by perfluorinated and polyfluorinated substances.	Fact Sheet
526	X-ray Inspection System to Demilitarize Targets	Active Project	This project will demonstrate and validate a portable X-ray machine to find projectiles lodged in Navy boat targets.	Fact Sheet
525	Non-Isocyanate Polyurethane-Free Formulation Coatings for Aircraft and Support Equipment	Active Project	The goal of this project is the qualification, approval and transition of polysiloxane topcoats as a replacement for isocyanate-containing formulations. The selected formulation will also be compatibility tested with chromium-free primer systems.	Fact Sheet
524	Innovative Hydrant Flushing	Active Project	This project will demonstrate and evaluate the effectiveness of using a truck-mounted potable water distribution system to prevent nitrification and maintain adequate free chlorine residual in Navy drinking water systems.	Fact Sheet
523	Integrated Diagnostic Stormwater Monitoring with Passive Sampling	Active Project	This project will evaluate the effectiveness of using passive sampling devices (PSD) to assess the impacts of stormwater runoff and improve stormwater management at Navy facilities.	Fact Sheet
522	Demonstration of New Strategies for Enhanced Monitored Natural Recovery at Navy Sediment Sites	Active Project	This project will demonstrate and validate the suitability of using uncontaminated natural sediments for the enhanced monitored natural recovery of contaminated sediments at Department of Defense and Department of the Navy sites.	Fact Sheet
521	Autonomous Benthic Ecology System	Active Project	This project will develop and test an Automated Benthic Ecology System (ABES) for the purpose of monitoring coral reef and benthic communities on vertical structures residing at Navy's at sea ranges, vessel homeports and weapons test and evaluation centers.	Fact Sheet
520	Quantification of Polychlorinated Biphenyls Paint Volatilization	Active Project	This project will investigate the volatilization rate of paint containing polychlorinated biphenyls (PCB) in order to generate a defensible, environmentally and fiscally responsible work process for the removal of paints containing these compounds.	Fact Sheet
519	Analysis of the Long-Term Fate of Munitions Constituents on Terrestrial Sites	Active Project	The objective of the proposed effort is to identify, research, and summarize the current knowledge about the fate, transport, and toxicity characteristics of munition constituents (MCs) and associated degradation products found at Navy terrestrial munition response sites.	Fact Sheet

Want insights into our new start projects?

Fact sheets for all of our new projects are now available on our web site and no username or password is required. Visit www.nesdi.navy.mil then select "Projects." You'll see a list of projects with our most recent efforts at the top of the list. Click on the "Fact Sheet" link in the "More Information" column for more insights.

www.nesdi.navy.mil



Program Schedule

For the next couple of weeks, the program will concentrate its efforts on the evaluation of full proposals to address the priority needs that were collected, screened, evaluated, and ranked as part of the program's FY16 needs solicitation process. A program schedule for the entire year is provided below.

No.	What	When
1.	Announce FY17 Needs Solicitation	1 June 2016
2.	Announce FY17 New Starts	29 July 2016
3.	Close FY17 Needs Solicitation	3 August 2016
4.	Screen Needs	8-12 August 2016
5.	Evaluate & Rank Needs	12-16 September 2016
6.	Obtain Sponsor Review & Approval of Needs	19 September - 7 October 2016
7.	Request Pre-proposals	14 October 2016
8.	Conduct OPNAV N45 Programmatic Review	November 2016
9.	Pre-proposals DUE	16 November 2016
10.	Make Pre-proposals Assignments to FWGs	2 December 2016
11.	TDWG & FWG Comments on Pre-proposals DUE	21 December 2016
12.	Evaluate Pre-proposals	9-13 January 2017
13.	Request Full Proposals	19 January 2017
14.	Conduct East Coast In-Progress Review	March 2017 (Fleet Readiness Center Southeast, Jacksonville, FL)
15.	Full Proposals DUE	15 March 2017
16.	TDWG & FWG Comments on Full Proposals DUE	31 March 2017
17.	Screen Full Proposals	3-7 April 2017
18.	Principal Investigator Answers to Full Proposal Screening Questions DUE	5 May 2017
19.	Conduct West Coast In-Progress Review	May 2017 (Naval Postgraduate School, Monterey, CA)
20.	Announce FY18 Needs Solicitation	1 June 2017
21.	Evaluate Full Proposals	by 8 June 2017
22.	Obtain Sponsor Review & Approval of Full Proposals DUE	29 June 2017
23.	Quarterly Status Reports Due	5 July 2016 3 October 2016 2 January 2017 3 April 2017

Check out our web site (www.nesdi.navy.mil) for the latest version of our program schedule.



SPRING/SUMMER 2016

NESDI NEWS

Highlights & Happenings

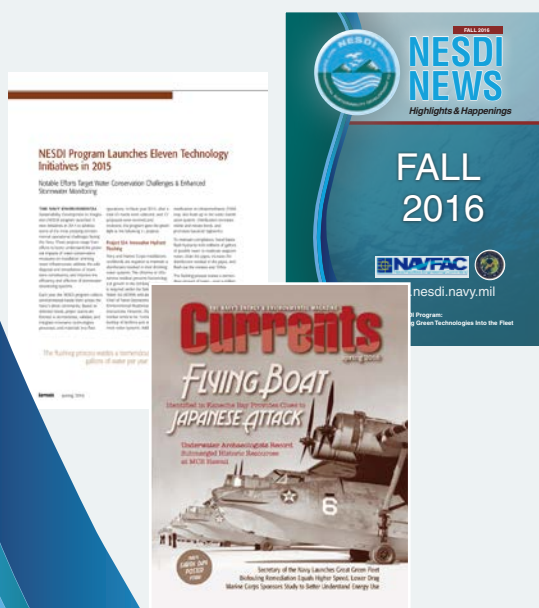
Getting on Our Mailing List

If you're not already on our mailing list and want to subscribe to *NESDI News*, please send your email address to Lorraine Wass at ljwass@outlook.com.

Contact Your TDWG Member

For more information about the operation of the NESDI program, contact Ken Kaempffe, the NESDI program manager, or members of the TDWG.

No.	Name	Command	Phone	Email
1.	Kaempffe, Ken (Chair)	NAVFAC	805-982-4893	ken.kaempffe@navy.mil
2.	Bendick, John	NAVSUP	717-605-9144	john.bendick@navy.mil
3.	Bixler, Christy	NAVFAC/CNIC	202-685-9313	christy.bixler@navy.mil
4.	Earley, Pat	SPAWAR	619-553-2768	patrick.earley@navy.mil
5.	Hertel, Bill	NAVSEA	301-227-5259	william.hertel@navy.mil
6.	Harre, Karla	NAVFAC	805-982-2636	karla.harre@navy.mil
7.	Kopack, David	NAVSEA	202-781-3247	david.kopack@navy.mil
8.	McCaffrey, Bruce	Consultant	773-376-6200	brucemccaffrey@sbcglobal.net
9.	Rasmussen, Eric	NAVAIR	732-323-7481	eric.rasmussen@navy.mil
10.	Sugiyama, Barbara	NAVFAC	805-982-1668	barbara.sugiyama@navy.mil
11.	Webber, Cindy	NAVAIR	760-939-2060	cynthia.webber@navy.mil
12.	Youngers, Luzmarie	NAVAIR	904-790-6382	luzmarie.youngers@navy.mil



In the Next Issue of *NESDI News*

There is a lot more information coming your way in the next issue of *NESDI News: Highlights & Happenings*. In our fall 2016 issue, we will provide you with updates on our efforts to evaluate and rank the full proposals received via our FY16 solicitation process.

Until then, look for an article about our eleven FY16 “new start” projects in the spring 2016 issue of *Currents*, the Navy’s energy and environmental magazine. You can read our latest article “NESDI Program Launches Eleven Technology Initiatives” on-line and subscribe to *Currents* at <http://greenfleet.dodlive.mil/currents-magazine>.