



NAVFAC's Technology Transfer and Outreach Programs for Environmental Restoration: *Sharing Technology Trends and Leveraging Feedback*

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NAVFAC EXWC
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OVERVIEW



- **NAVFAC Training and Outreach Programs**
- **NAVFAC Technology Transfer (T2) Process and Feedback**
 - **Feedback on Technology Transfer Formats**
 - **Feedback on Use of Innovative Technologies**
- **Proposed Survey Method for Tracking Innovation Adoption**
- **Conclusions**



NAVFAC TRAINING AND OUTREACH: NAVFAC TECHNOLOGY TRANSFER PROGRAM OVERVIEW

Navy Environmental Restoration Program Manual (February 2018):

The goal of the program is to exchange information about the latest research, technology innovations, and lessons learned from real-world applications.

Two Way Communication is Key!



Navy Technology Transfer (T2) Program Overview



Source: Figure 19-2, NERP Manual, February 2018

Methods of Training and Outreach for Navy T2 Program

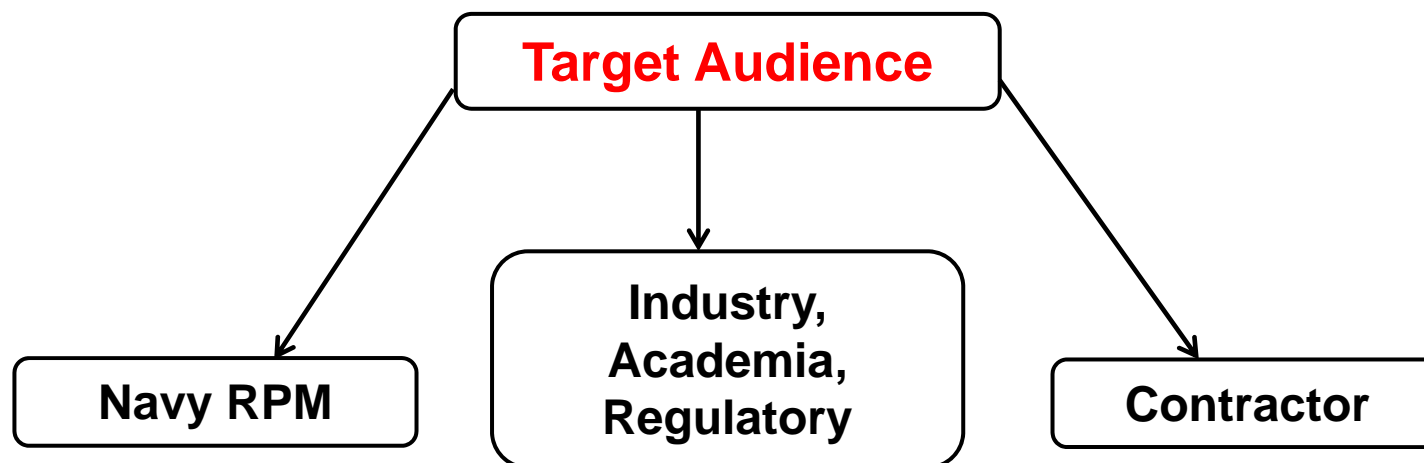


•Formal Training

- Remediation Innovative Technology Seminar (RITS)
- Remedial Project Manager (RPM) Training Event
- CECOS

•Web-based

- Open Environmental Remediation Resource Webinar Series (OER2) Webinar
- Environmental Restoration and BRAC Website
- Multimedia web tools, social media



NAVFAC REMEDIATION INNOVATIVE TECHNOLOGY SEMINAR (RITS)



- Held once per year at Navy and non-Navy locations
- 2 day seminar, 6 topics (3 per day)
- Ongoing program, 20 plus years
- In-person classroom training allows in-depth topic coverage
- Direct connection to subject matter expert (SME)
- Live demonstrations of technologies
- Average attendance = 250 / year

NAVFAC **RITS 2018**
Remediation Innovative Technology Seminar
NAVFAC's showcase for Environmental Restoration (ER) technology, methodology, and guidance news. Don't miss this opportunity to benefit from high-caliber, Navy-focused information.

Who	When & Where	Last Day to Register
Remedial Project Managers (RPMs), other Navy ER personnel, Department of Defense personnel, federal/state/local regulators, and contractors with an active Department of the Navy (DON) ER contract are welcome to attend.	16-17 May (Wednesday-Thursday) River Cove Catering & Conference Center (O'Club) St. John's Conference Room Building 10, Mustin Road NAS Jacksonville, FL 32212	2 May 2018
	21-22 May (Monday-Tuesday) Washington Navy Yard Catering & Conference Center 1454 Parsons Avenue SE Building 211 Washington, DC 20374-5092	7 May 2018
	23-24 May (Wednesday-Thursday) Little Creek Conference Center Building 3430 JEB Little Creek Norfolk, VA 23521-2230	9 May 2018
	4-5 June (Monday-Tuesday) Anchors Catering and Conference Center 2375 Recreation Way Building 3210 San Diego, CA 92136	21 May 2018
	6-7 June (Wednesday-Thursday) Naval Base Kitsap Bangor Plaza 2720 Ohio Street Silverdale, WA 98315	23 May 2018
	12-13 June (Tuesday-Wednesday) Oahu Veterans Center 1298 Kukila Street Honolulu, HI 96818	29 May 2018

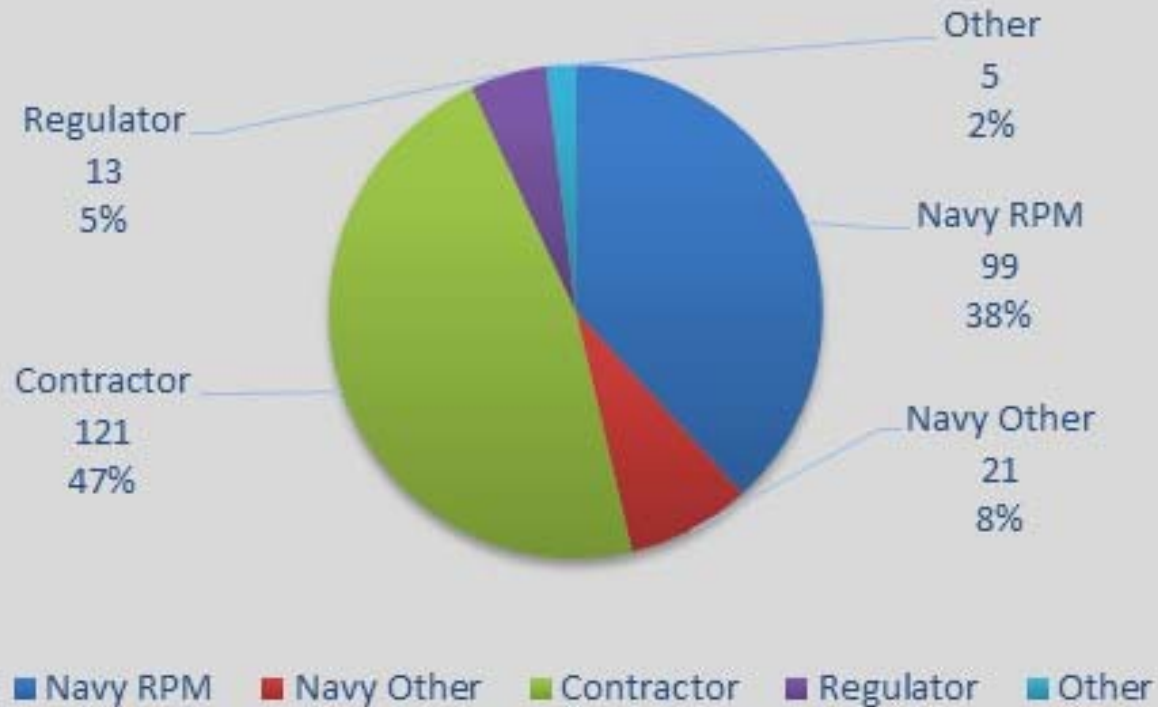
What
Two-day seminar, classroom setting. Student Handbook provided. Dress in layers and bring a jacket.

How to Register
Send an email to EXWC_T2@navy.mil with your name and desired RITS location. This seminar is intended for Navy personnel, regulators, and contractors with an active ER contract.

TARGET AUDIENCE



RITS 2017 Attendees by Role



Open Environmental Restoration Resource (OER2) Webinar Series

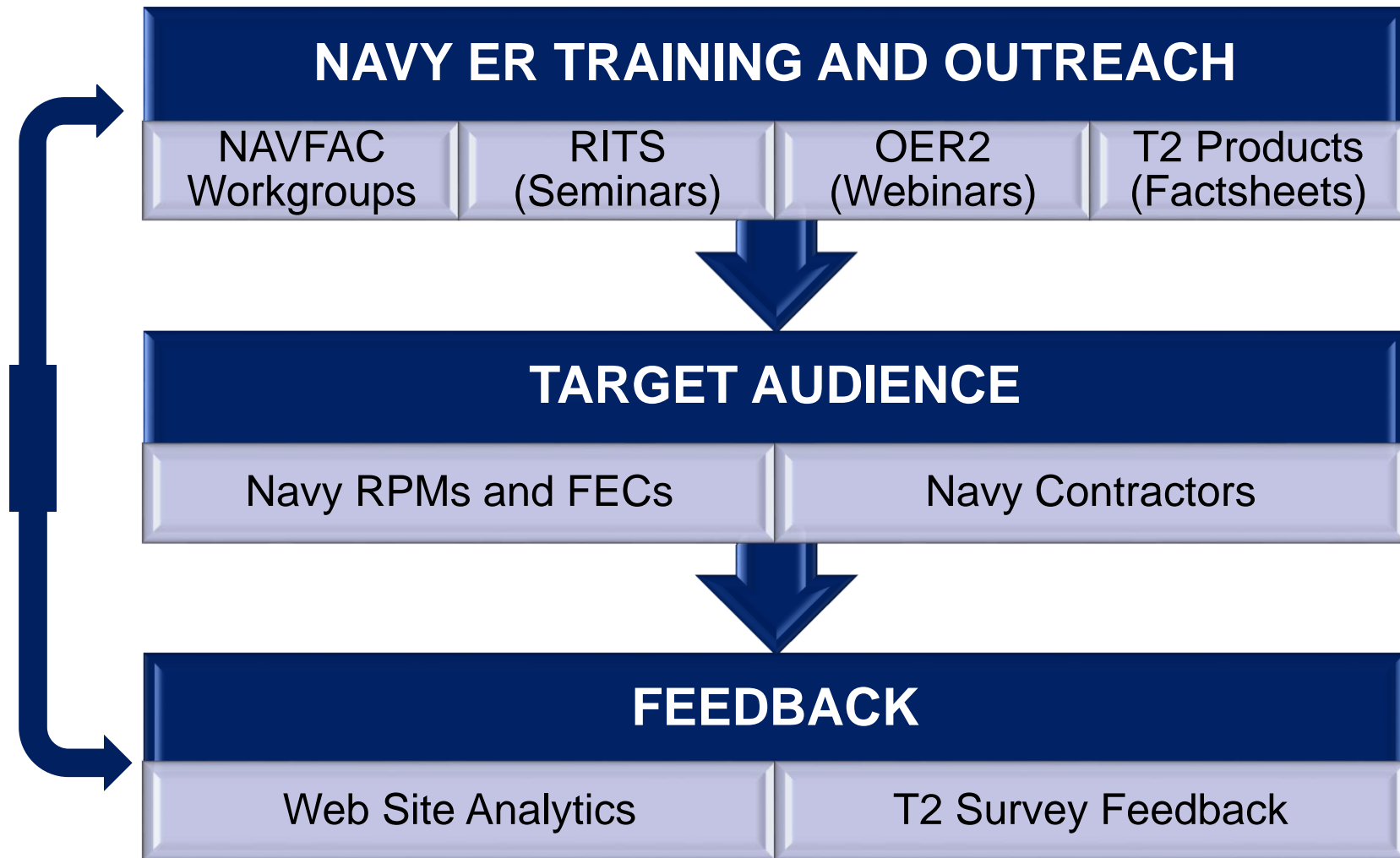


- OPEN to RPMs, Contractors, and other remediation practitioners who support and execute the ERP**
- Hear about the latest tools, technologies and practices to improve efficiency**
- Promote innovation and share lessons learned**
- After webinar, short survey is sent out to receive feedback**

A screenshot of the NAVFAC website. The page title is "Engineering and Expeditionary Warfare Center". There is a search bar with "Enter Query" and a magnifying glass icon. Below the search bar are links for "Employees", "Client", and "View Map". The main navigation bar includes "IWC", "PRODUCTS AND SERVICES", and "NEWS". The breadcrumb trail reads "Home > Products and Services > Environmental Security > NAVFAC Environmental Restoration and BRAC > OER2". The main heading is "OER2 Webinars". Below this is a large green banner with a photo of trees on the left. The text on the banner reads "OER2" in large white letters, followed by the NAVFAC logo. Below the logo, it says "Open Environmental Restoration Resources Webinar". Underneath the banner is the section "Overview" with the following text: "The Naval Facilities Engineering Command (NAVFAC) is pleased to announce the Open Environmental Restoration Resource (OER2) Webinar Series. NAVFAC developed the OER2 Webinar Series for the Environmental Restoration Program (ERP) Community. We hope that the Community finds the new format and content interesting and we will solicit feedback from the community." The text is partially cut off at the bottom.

NAVFAC T2 PROCESS AND FEEDBACK

NAVFAC T2 PROCESS AND FEEDBACK




T2 SURVEY ISSUED AT RITS FOR FEEDBACK



- Purpose of T2 Survey is to understand:

- preferred formats for information
- latest challenges faced at ER sites
- adoption of best practices and innovations
- Sent out after RITS is over (annually ~ June)



Name: _____
Contact Information: (e-mail/phone): _____
 NAVFAC, Specify Component: _____
 Contractor, Specify: _____
 Other, Specify: _____

TECHNOLOGY TRANSFER ANNUAL SURVEY 2017

This survey is an important tool that Navy planners use for the early identification of challenges facing Remedial Project Managers (RPMs) and the Environmental Restoration Program (ERP). It also allows the Navy to direct technical support and training investments where they are needed most. Thank you for your input.

1 Training

The Department of the Navy (DON) ERP is left with many complex sites and issues.


1a. Which of the following topics would you like more training on to help guide you through the complex issues at ER sites (check all that apply):

- Natural attenuation strategies for groundwater
- PFAS site management
- Improved operation and maintenance (O&M) of pump-and-treat systems
- Sediment site management strategies
- Emerging contaminants
- PAHs in soil and sediment
- Heavy metals in soil and sediment
- Bioremediation
- Vapor intrusion
- Other (please list): _____

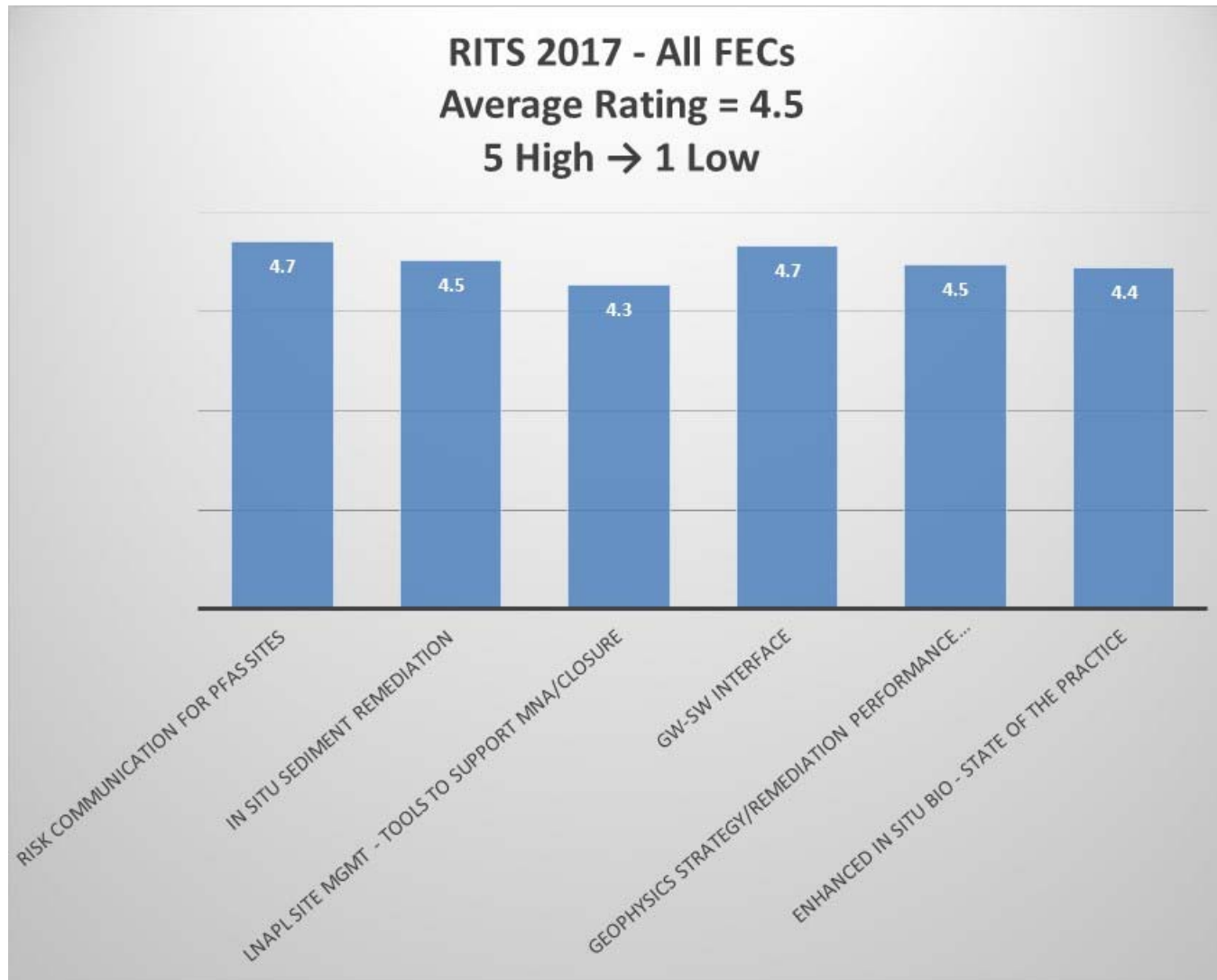
1b. Do you know of other training topics that could benefit RPMs and improve the ERP? (please specify below):

1c. In what format would you most prefer to receive additional ER training?

- Open Environmental Restoration Resource (OER2) Webinar
- Remediation Innovative Technology Seminar (RITS)
- RPM Training (Bi-Annual Event)
- In-Person Training for Project or Stakeholder Teams
- Topical Fact Sheets
- Other (please specify below): _____

 Flip to back

2017 RITS TRAINING FEEDBACK



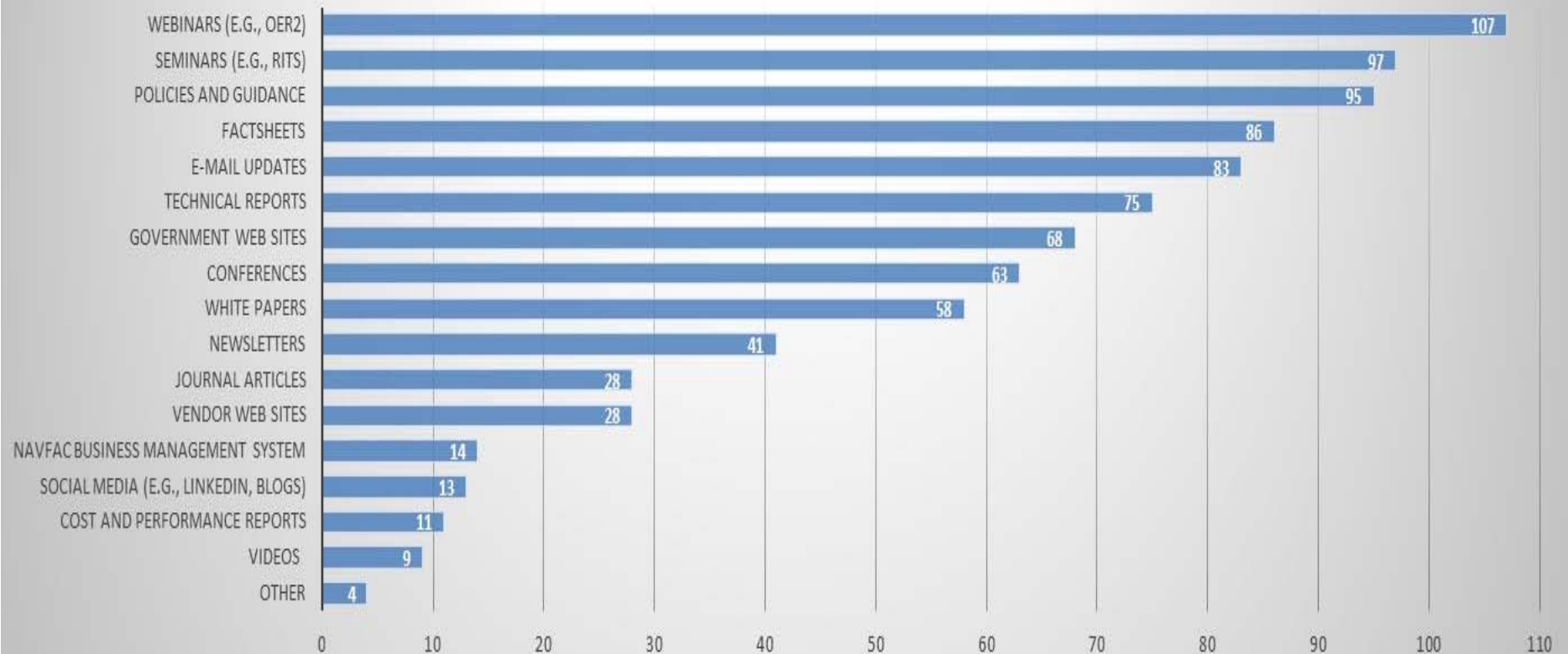
**High
2017
RITS
Survey
Scores
Indicate
Training
Success**

FEEDBACK ON TECHNOLOGY TRANSFER FORMATS

FEEDBACK ON T2 FORMATS



Technology Transfer Formats



FEEDBACK ON USE OF INNOVATIVE TECHNOLOGIES

USE OF INNOVATIVE SITE CHARACTERIZATION AND REMEDIAL TECHNOLOGIES



•Site Characterization

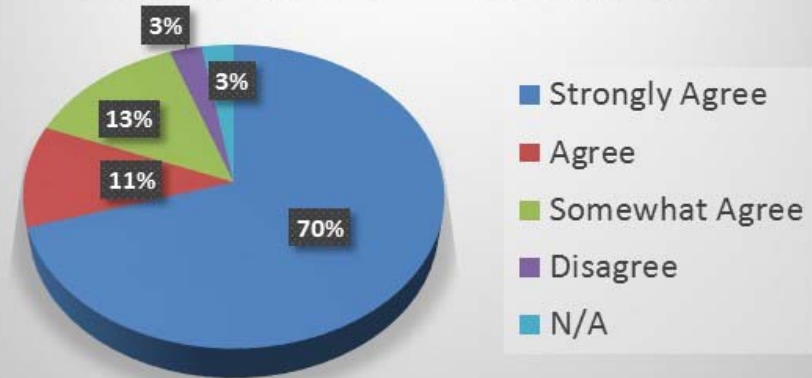
- Agree to Strongly Agree
- 81% improved CSM
- 78% reduced cleanup footprint

•Remedial Tech

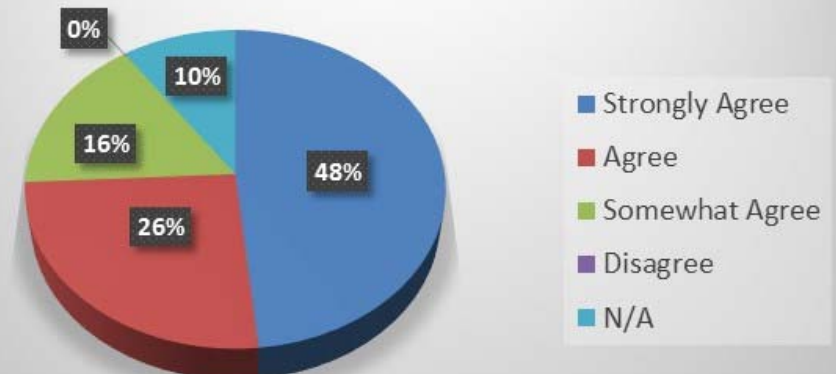
- Agree to Strongly Agree
- 74% reduced mass
- 63% reduced remedial timeframe

Key Point: SUCCESS!

The innovative technology improved the conceptual site model (CSM)



The innovative remedial technology reduced contaminant mass



PROPOSED SURVEY METHOD FOR TRACKING INNOVATION ADOPTION

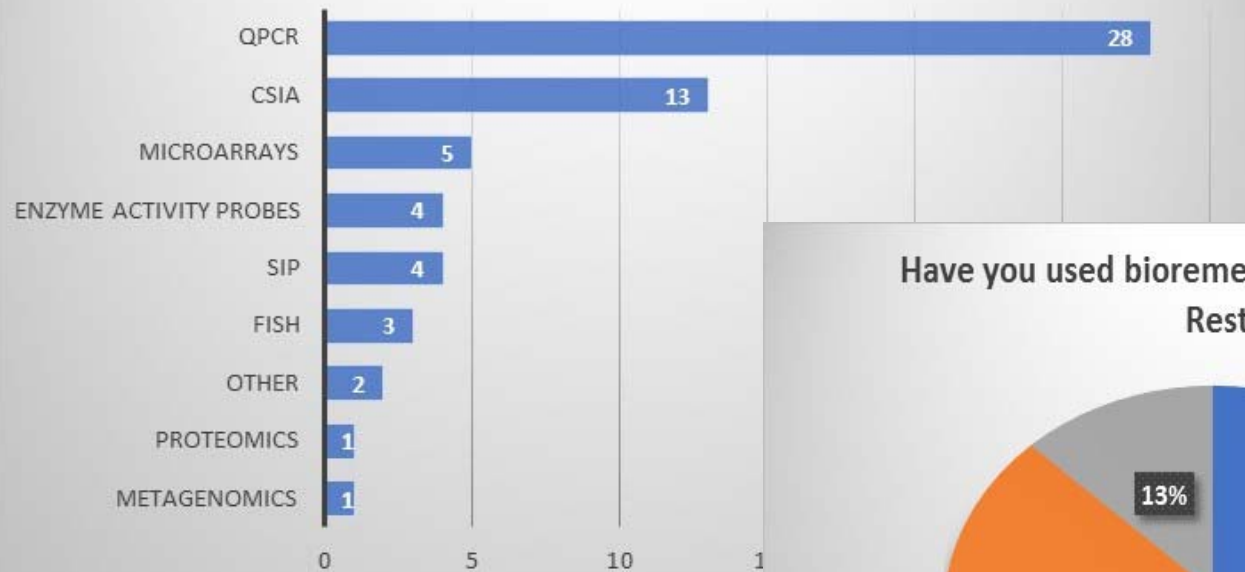
- **Utilize the T2 survey to track adoption/use of innovations before and after training**
 - 2017 baseline assessment for RITS 2017 topics
 - 2018 plan to assess similar questions

- **2017 RITS Training Topic Examples**
 - Bioremediation
 - Geophysical Tools
 - LNAPL Site Management
 - Groundwater Surface Water (GW/SW) Interface

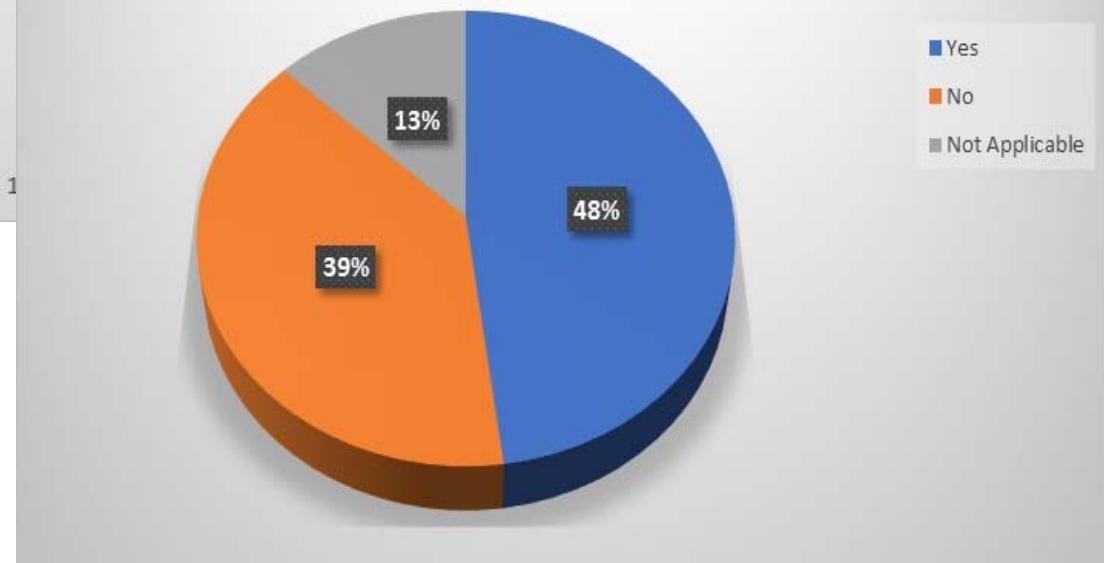
TECH INNOVATION: BIOREMEDIATION



Have you employed any advanced diagnostic tools to assess remedy performance?



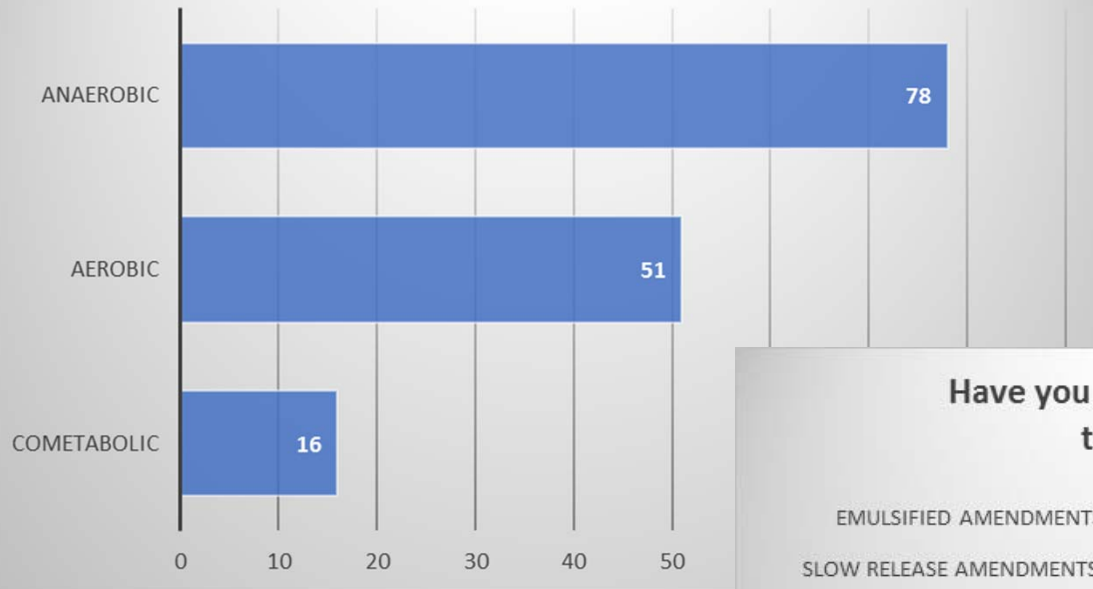
Have you used bioremediation at a DON Environmental Restoration site?



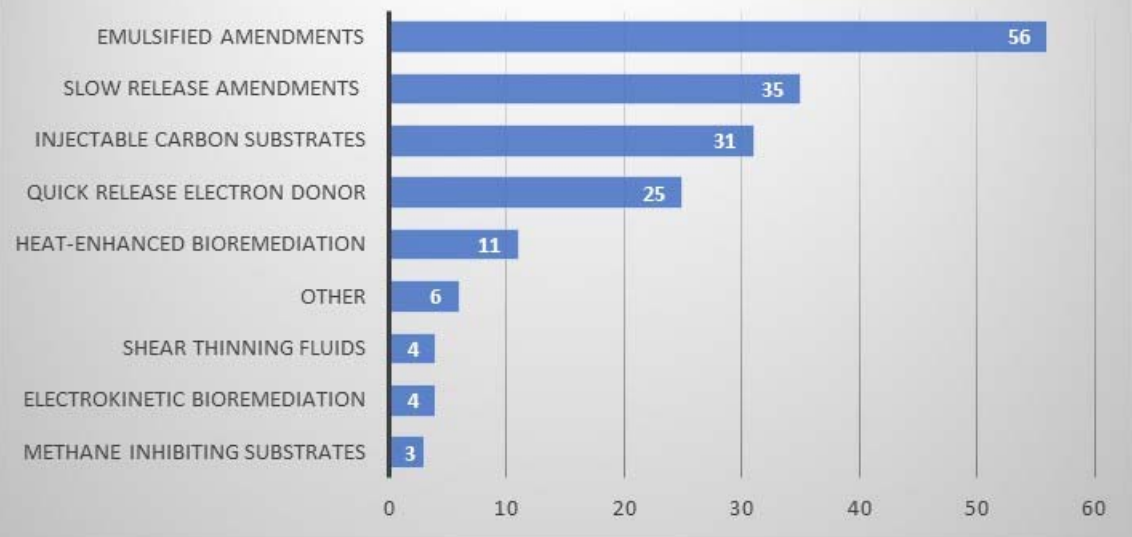
TECH INNOVATION: BIOREMEDIATION



What type of biological processes were relied upon?



Have you used any of the following innovative technologies or applications?



CONCLUSIONS:



- **Baseline Results Analyzed - Assess Change in 2018 T2 Survey**
- **No one size fits all for Navy training – online versus in person BOTH key to personnel**
- **Two way communication/information sharing is important for measuring success of Navy T2 Program (and Products)**

NAVFAC EXWC Points of Contact for T2



Mark Patterson – Environmental Restoration Technology Transfer and Central Programs Branch Head

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• Tara Meyers – T2 Program Lead

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• Kenda Neil – RITS Program Lead

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• Anthony Nelson – ARTT Workgroup Lead

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