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NAVFAC Capabilities and Directions to Advance Innovative Remediation Technologies

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Overview of Capabilities and Direction in Advancing Technology Innovation

- ❑ **Focus Areas:**
 - ✓ Emerging chemicals/requirements
 - ✓ Complex sites
 - ✓ Low-risk sites

- ❑ **Direction for Implementing Innovative Remediation:**
 - ✓ Integrating efforts through Execution, RPMs, and Workgroups (Optimization and Technology Innovation and Emerging Chemicals)
 - ✓ Strategic program investment for portfolio-wide themes
 - ✓ Utilizing NESDI for DON-specific field-ready technology validation
 - ✓ Leveraging DoD, other Services RDT&E efforts, and Tri-Service Remediation Optimization Workgroup

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Optimization and Technology Innovation Workgroup:

- ❑ Charter
 - ✓ Promote innovative technologies/approaches and optimization opportunities
 - ✓ All sites throughout all phases of remediation
 - ✓ FEC focal points - balanced performance, sustainability, schedule, and cost toward goals
 - 5-Year Review & GSR to address potential climate change impacts
 - Conducted as part of the long-term efficiency evaluation of a remedy
- ❑ Priorities
 - ✓ Technology innovation
 - ✓ Optimization implementation and tracking
 - ✓ Knowledge transfer
 - ✓ Collaboration with Emerging Chemicals Workgroup

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Strategic Investment and NESDI – MY2020 Status

Strategic Investment

Category	Count	Percentage
Emerging Reqs	7	50%
Complex Sites	4	29%
Low-Risk Sites	3	21%

NESDI

Category	Count	Percentage
Emerging Reqs	9	53%
Complex Sites	6	35%
Low-Risk Sites	2	12%

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Example of Strategic Investment: Low-risk Petroleum Sites

- ❑ Problem: Low-risk petroleum sites have not reached RC, even after decades of active remedies
- ❑ Findings: Navy petroleum sites fall into three categories
 - ✓ Type A: LNAPL thickness doesn't meet state criteria
 - ✓ Type B: LNAPL thickness meets state criteria, but TPH does not
 - ✓ Type C: LNAPL thickness and TPH meet state criteria, but dissolved plume constituents exceed state MCLs
- ❑ Recommendations:
 - ✓ Type A: Transition to semi-passive remedy (skimmers) or MNA
 - ✓ Type B: Use NSZD measurements and TPH with silica-gel cleanup to progress towards RC
 - ✓ Type C: Pursue RC

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How NAVFAC overcomes barriers to innovation:

- ❑ Improving pace of innovation

Program	Selection & Contracting	Project Execution
SERDP/ESTCP	17 – 19 months	3 – 4 years
NESDI	12 - 14 months	2 - 4 years
NAVFAC Strategic Investment	3 – 6 months	1 – 2 years

Area where FRTR can provide value:

- ❑ Technology Clearing House
 - ✓ Facilitate sharing data (performance, cost, success stories, lessons learned) on application of new approaches/technologies
 - ✓ Provide central data repository that is easily searchable by RPMs
 - ✓ Immediate need for repository of validated PFAS sampling and analysis methods and PFAS treatment technologies

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FY21 Strategic Investments (FY22-23):

- ❑ Full-scale PFAS IDW water treatment; Willow Grove & Pt. Mugu
 - ✓ Portable sorbent kit and recirculation pump from drums and trailer-mounted system for larger tanks
 - ✓ Outcome: Dispose treated water at local non-hazardous facility and implement technologies at PFAS sites.
- ❑ Potential PFAS Sample Interference in Wells Completed with Bentonite Pellets; JAX and Pensacola
 - ✓ Outcome: Determine what factors to consider when selecting the pellets for PFAS sites
- ❑ VI Mitigation Methods for Preferential Pathways in Navy's Non-Residential Buildings; Yorktown
 - ✓ Implement methods: Check valves, P-Traps, sewer liners, sewer ventilation; cheaper than whole building mitigation such as ASD
 - ✓ Outcome: Implemented the strategy with regulatory buy in at a site
- ❑ Roadmap to RC for the Navy's Petroleum Sites; SW and ML
 - ✓ Outcome: Accelerate 2 sites each of Types A & B to RC using NSZD, transmissivity, silica-gel cleanup, and/or weathering analysis. Capture RC experience in guidance to other sites.
- ❑ Decision Tool to Determine Abiotic Degradation Contribution; SE
 - ✓ Improve understanding in natural abiotic transformation to strengthen case for MNA.
 - ✓ Outcome: Abiotic degradation as an accepted MNA line of evidence at a site.

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Questions?