

# FORT HANCOCK FORMERLY USED DEFENSE SITE

## MILITARY MUNITIONS RESPONSE PROGRAM

### Public Meeting to Present the Proposed Plan

Prepared by

The US Army Corps of Engineers (USACE)  
New York & Baltimore Districts

**29 July 2021**

*"The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."*



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# INTRODUCTION

*The U.S. Army Corps of Engineers (USACE) is pleased to present the Proposed Plan for the Fort Hancock Formerly Used Defense Site (FUDS), Monmouth County, New Jersey.*

- ❑ The primary purpose of this Proposed Plan is to identify preferred remedial alternatives to mitigate unacceptable explosive hazards due to munitions and explosives of concern (MEC) that may remain within the Fort Hancock FUDS.
- ❑ This Proposed Plan was prepared to satisfy Section 117 (a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The Proposed Plan highlights the key factors that led to identifying USACE's preferred alternative.



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# PROJECT PERSONNEL

## **USACE**

Kathleen Cuzzolino .....Project Manager  
 Todd Beckwith.....MM Design Manager  
 David King.....Project Geophysicist

## **NJDEP**

Ralph Rodrigues.....Emergency Response Specialist  
 Tom Bourque (UXO Pro).....UXO Consultant  
 Daniel Haines (UXO Pro).....UXO Consultant

## **National Park Service**

Pete McCarthy.....Sandy Hook Unit Manager  
 Patti Rafferty.....Chief of Resource Stewardship  
 Jennifer Nersesian.....Park Superintendent

## **ERT (USACE Contractor)**

Thomas Bachovchin.....Project Manager  
 Jim Stuby.....Project Geophysicist



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# KEY DEFINITIONS

A few key definitions are provided to better understand the presentation of the Proposed Plan

- **Applicable or Relevant and Appropriate Requirements (ARARs)** - cleanup standards and substantive requirements promulgated under Federal or state law that address a hazardous substance, contaminant, remedial action, or location found at a CERCLA site. Relevant and appropriate requirements address situations similar to those encountered at a CERCLA site such that their use is well suited to the site.
- **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** - A Federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act that concerns hazardous substances.
- **Formerly Used Defense Site (FUDS)** - An area of an eligible FUDS property containing one or more releases or threatened releases of a similar response nature, treated as a discrete entity or consolidated grouping for response purposes. Projects are categorized by actions described under installation restoration (hazardous, toxic, and radioactive waste, military munitions response program, or building demolition/debris removal.
- **Munitions and Explosives of Concern (MEC)** - distinguishes specific categories of military munitions that may pose unique explosive safety risks, including UXO, DMM, or MC present in high enough concentrations to pose an explosive hazard.
- **Munitions Response Site (MRS)** - A discrete location within a Munitions Response Area that is known to require a munitions response.



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## KEY DEFINITIONS (CONTINUED)

- **Remedial Investigation (RI)** – A study that identifies the nature and extent of contamination at a site and provides information supporting the evaluation for the need for a remedy for a site where hazardous substances may be present.
- **Feasibility Study (FS)** - The FS serves as the mechanism for the development, screening, and detailed evaluation of alternative remedial actions to address issues identified in the Remedial Investigation.
- **Decision Document (DD)** - The documentation of remedial action decisions at non-NPL FUDS Properties. It is a public document that describes the cleanup action/remedy selected, the basis for the choice, and responds to public comments.
- **Proposed Plan** - Supplements the RI/FS and provides the public with a reasonable opportunity to comment on the preferred alternative for remedial action, or alternative plans under consideration, and to participate in the selection of remedial action at a site.
- **Land Use Controls (LUCs)** - Physical, legal, or administrative mechanisms that restrict the use of, or limit access to, real property to prevent/reduce risks to human health and the environment.
- **Remedial Action Objective (RAO)** - Objectives established for remedial actions to guide the development of alternatives and focus the comparison of remedial action alternatives. RAOs assist in clarifying the goal of minimizing risk and achieving an acceptable level of protection for human health and the environment.



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# PROJECT OVERVIEW

- ❑ This project falls under the Military Munitions Response Program (MMRP) of the Defense Environmental Restoration Program (DERP). The DoD established the MMRP to address MEC and munitions constituents (MC).
- ❑ Under the DERP, the U.S. Army is the DoD's lead Agency for FUDS, and USACE executes FUDS for the Army. USACE performs response activities throughout the Fort Hancock FUDS in accordance with CERCLA.
- ❑ USACE will finalize the preferred alternative selection for the Fort Hancock FUDS in a Decision Document after evaluating comments received from the public on this Proposed Plan and in coordination with the New Jersey Department of Environmental Protection (NJDEP).

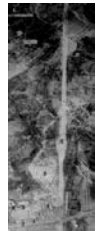


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# The CERCLA Process

*(The Comprehensive Environmental Response, Compensation, and Liability Act)*



## Preliminary Assessment



## Site Inspection



## Remedial Investigation

General Purpose: Collect data to characterize site conditions; Determine the nature of the waste; Assess risk to human health and the environment; & Evaluate treatment options.

Information gathered as part of the RI influences the development of the FS which, in turn, may require further data collection and field investigations.



## Feasibility Study

General Purpose: To develop, screen, and evaluate alternatives for clean-up.

## Decision Document



General Purpose: Select the alternative as well as provide an overview of the project. This would include site history, previous and current investigations, and characterization of contamination.



## Proposed Plan

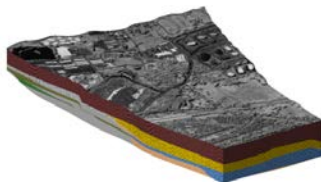
General Purpose: Presents the evaluation of clean-up alternatives and provides a recommendation for the preferred alternative.

This document is made available for public review and comment.



## Removal Action

General Purpose: If prompt action is deemed appropriate prior to the completion of the RI/FS process, USACE will begin removal of the contaminants of concern.



## Remedial Design/ Remedial Action

General Purpose: Implementation of the action determined in the Decision Document.



## Long Term Monitoring

General Purpose: To conduct any long term monitoring necessary and conduct five year reviews of the Formerly Used Defense Site.

# SITE BACKGROUND

- ❑ Fort Hancock is located on the Sandy Hook peninsula in Monmouth County, New Jersey, in the Lower Bay of the Hudson River.
- ❑ The peninsula, which encompasses approximately 1,700 acres, is known as the Sandy Hook Unit of the Gateway National Recreation Area and is a National Historic Landmark.
- ❑ It is currently managed by the Department of the Interior's National Park Service (NPS) and the U.S. Coast Guard, and is used for recreational purposes year-round.
- ❑ Figure 1 provides the site location.



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# SITE BACKGROUND

- ❑ The U.S. military has historically occupied much of the Sandy Hook Unit. From 1874 to 1918, it was used as a proving ground to test U.S. weapons and ordnance of all types. The firing of weapons took place on the eastern side of the peninsula, from north to south, with six impact areas ranging in distance from 1,000 yards to 3.75-miles from the firing battery.
- ❑ Many military features still exist, including living quarters and administrative buildings, gun batteries, four NIKE missile silos, and a light house.
- ❑ In the early 1960s, the property was transferred to the State of New Jersey, which operated the Sandy Hook State Park. In 1973, the U.S. Department of Interior, NPS, took possession of the park and integrated it into the Gateway National Recreation Area.



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# PREVIOUS INVESTIGATIONS/STUDIES

The primary investigation phases at the Fort Hancock FUDS were the 2007 Site Inspection (SI) and the 2014 RI (and three subsequent addenda to the RI).

❑ The 2014 RI characterized the nature and extent of MEC and MC in land-based and water-based MRSs.

- With regard to the nature and extent of MEC, the 2014 RI delineated areas of focus based on MEC densities.
- With regard to the nature and extent of MC, the 2014 RI recommended additional soil sampling to determine the extent and source of metals contamination in one small location known as the B003 Area.
- The 2014 RI also recommended that a portion of one MRS, previously excluded from investigation due to sensitive species impact concerns, be further investigated.



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# PREVIOUS INVESTIGATIONS/STUDIES

- ❑ RI Addendum #1 further characterized the B003 area for MC in soil, and USACE was able to conclude that no unacceptable MC risks to human health or the environment were present at the Fort Hancock FUDS (USACE, 2016).
- ❑ RI Addendum #2 was completed to further characterize the previously excluded portion of the MRS. The investigation reduced the MRS boundary based on the findings (USACE, 2017).
- ❑ RI Addendum #3 addressed additional acreage previously excluded due to plant impact concerns (MRS 08). It also included development of the Eastern Shoreline MRS to address munitions that have historically been found on the beaches after storm events (USACE, 2018).



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# PREVIOUS INVESTIGATIONS/STUDIES

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- ❑ Through the multiple investigations at the Fort Hancock FUDS, the MRS footprints evolved as successive investigations provided new characterization information. See Figure 1.
- ❑ MEC risk evaluations were completed for all MRSs using the Risk Management Matrix Methodology (USACE, 2017b), which defines acceptable and unacceptable risk based on the likelihood of an encounter, the severity of incident, and the sensitivity of interaction based on expected land use activities.
- ❑ Five MRSs were found to represent unacceptable explosive hazard conditions. Two of these were configured into smaller MRSs resulting in **eight MRSs representing unacceptable site conditions:**
  - MRS 03
  - MRS 05B, MRS 05E, MRS 05G
  - MRS 06
  - MRS 08A, MRS 08B
  - MRS 10



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# PREVIOUS INVESTIGATIONS/STUDIES

- ❑ These 8 MRSs were then categorized using conceptual site model (CSM) elements such as pedestrian traffic conditions, whether they were considered to contain MEC (such that a previous MEC removal was recommended), or whether they represented special situations (for example, no MEC was found in the shoreline MRS during the RI, but munitions washing ashore or the result of erosion, has historically been observed).
- ❑ Accordingly, 3 MRS Groups were developed based on CSM scenarios, each containing MRSs with CSM attributes similar enough that the follow-on analysis of alternatives was able to be conducted at the MRS Group level (see Figures 2, 3, and 4):
  - **MRS Group 1**, comprising MRS 03, MRS 05B South, and MRS 06: MEC found, high pedestrian traffic, areas of existing munitions, or where previous MEC removal recommendations have been made.
  - **MRS Group 2**, comprising MRS 05B North, MRS 05E, MRS 08A and 08B: MEC found, low to no pedestrian traffic area.
  - **MRS Group 3**, comprising MRS 05G and MRS 10: Special situations where MEC found in high pedestrian traffic, but area has significantly been altered by storms, or munitions on the shore have historically been observed.



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# SUMMARY OF SITE RISKS AND HAZARDS

## MC Risks--

❑ The 2016 RI Addendum #1 updated the human health and ecological risk assessment and concluded that no unacceptable risks due to MC were present.

## MEC Explosive Hazards--

❑ Based on the RMM results, the following MRSs represent acceptable site conditions and No Further Action is the preferred alternative:

- MRS 05A, MRS 05C, MRS 05D, MRS 05F, MRS 07, MRS 08C, and MRS 08D

❑ Based on the RMM results, the following MRSs represent unacceptable explosive hazards, and it is the judgment of USACE that the preferred alternatives identified in this Proposed Plan, or one of the other alternatives considered, are necessary to protect public health and the environment:

- MRS 03, MRS 05B, MRS 05E, MRS 05G, MRS 06, MRS 08A, MRS 08B, and MRS 10



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# FEASIBILITY STUDY

- ❑ Following the RI nature and extent characterization, a Feasibility Study (USACE 2020) was completed to evaluate remedial action alternatives to address the risks and hazards identified in the RI.
- ❑ Remedial Action Objectives (RAOs) describe what the cleanup is expected to accomplish, specifying the contaminants, media, receptors, exposure pathways, and preliminary remediation goals.
- ❑ For the Fort Hancock FUDS, remedial alternatives were developed for unacceptable explosive hazards posed by MEC potentially remaining at the 8 MRSs. The RAOs are:
  - To reduce the risk due to the presence of MEC on the surface or in the subsurface to a depth of 2 feet below ground surface (bgs) to address direct contact by park workers and recreational users, and direct contact of MEC in the subsurface to depths greater than 2 feet bgs by authorized park workers, such that an acceptable condition (as defined by the RMM) is achieved.



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# APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)

ARARs are site-specific and involve evaluation of federal and state environmental laws regarding contaminants of concern, site characteristics, and proposed remedial alternatives. The ARARs are specifically reviewed relative to each remedial alternative. The following ARARs have been identified for the Fort Hancock FUDS:

## ☐ **Federal Statutes/Laws**

- Federal Endangered Species Act
- Federal Migratory Bird Treaty Act of 1918
- Federal Resource Conservation and Recovery (RCRA)

## ☐ **State Statutes/Laws (Proposed by the State of New Jersey)**

- NJDEP Endangered Plant Species List Act and Non-Game Species Conservation Act



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# EVALUATION OF REMEDIAL ALTERNATIVES

❑ General categories of technologies for addressing MEC, such as detection, removal, and disposal, were identified and screened. Five remedial alternatives were identified:

- Alternative 1: No Action
- Alternative 2: Administrative Land Use Controls (LUCs)
- Alternative 3: Physical LUCs
- Alternative 4: MEC Removal to UU/UE
- Alternative 5: MEC Removal to 2 feet with LUCs

❑ These 5 remedial alternatives, developed to meet the RAOs, were evaluated against three broad criteria: effectiveness, implementability, and cost.

❑ The broad screen concluded that Alternative 4 was not effective in the short term, was not technically/administratively feasible, and was cost prohibitive. Therefore, Alternative 4 was not retained for the more detailed comparative analysis of alternatives.



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# EVALUATION OF REMEDIAL ALTERNATIVES

❑ USEPA developed 9 criteria to address CERCLA requirements for selecting remedial alternatives. These criteria were used to evaluate the alternatives of each of the 3 MRS Groups individually, and then against one another, in order to select a preferred alternative. The criteria are:

➤ Threshold

- Overall Protectiveness of Human Health and the Environment
- Compliance with ARARs

➤ Balancing

- Long-term Effectiveness and Permanence
- Reduction in Toxicity, Mobility, or Volume through Treatment
- Short-Term Effectiveness
- Implementability
- Cost

➤ Modifying

- State/Support Agency Acceptance
- Community Acceptance



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# EVALUATION OF REMEDIAL ALTERNATIVES

## ❑ **MRS Group 1** (Figure 2)

- Comprises MRS 03, MRS 05B South, and MRS 06.
- MEC was found, high pedestrian traffic, areas of existing munitions, or where previous MEC removal recommendations have been made.

❑ The table on the next slide presents the detailed analysis of alternatives for MRS Group 1.



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# DETAILED ANALYSIS OF ALTERNATIVES

## MRS GROUP 1

**Table 8.1: Summary of Detailed Analysis of Explosive Hazards Remedial Alternatives – MRS Group 1**

	Screening Criterion	Alternative 1: No Further Action	Alternative 2: Administrative Land Use Controls	Alternative 3: Physical Land Use Controls	Alternative 5: MEC Removal to 2 feet with LUCs
Threshold	Overall Protection of Human Health and Environment <sup>1</sup>	○	●	●	●
	Compliance with ARARs	●	●	●	●
Balancing	Long-Term Effectiveness	○	◐	◐	●
	Reduction of Toxicity, Mobility and Volume Through Treatment <sup>2</sup>	○	○	○	●
	Short-Term Effectiveness	○	●	◐	◐
	Implementability:				
	Technical Feasibility	●	●	◐	●
	Administrative Feasibility	●	◐	◐	●
	Availability of Materials and Services	●	●	●	●
	Cost <sup>3</sup>	\$0.00	\$481,000	\$874,000	\$2,018,000
Modifying <sup>4</sup>	State Acceptance	TBD	TBD	TBD	TBD
	Community Acceptance	TBD	TBD	TBD	TBD

● Favorable ('YES' for threshold criteria)

◐ Moderately Favorable

○ Not Favorable ('NO' for threshold criteria)

<sup>1</sup> – Favorable for this criterion requires achieving 'Acceptable' site conditions using the RMM (see Appendix B of the FS Report).

<sup>2</sup> – For MEC, this criterion addresses reduction of volume of MEC.

<sup>3</sup> – Costs were developed using RACER. O&M for a 30-year duration is included, as applicable, for an alternative.

<sup>4</sup> – The Modifying criteria of state and community acceptance are 'To Be Determined (TBD)' following review and input from these parties.

# PREFERRED ALTERNATIVE FOR MRS GROUP 1

**Alternative 5: MEC Removal to 2 feet with LUCs, is the recommended preferred remedial alternative to achieve the explosive hazards RAOs for MRS Group 1.**

❑ Alternative 5 was ranked favorable for more CERCLA criteria than were the other alternatives.

- It is protective of human health and the environment and is compliant with ARARs in that it would be implemented to comply with protection of wildlife and plant species ARARs through close coordination with NPS.
- It is effective in the long term, and is the only alternative to reduce the volume of MEC.
- It is moderately favorable relative to short term effectiveness, and favorable for implementability.
- While Alternative 5 is the most costly alternative, it is also the only one that will physically reduce the volume of MEC in these high pedestrian traffic areas.



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# EVALUATION OF REMEDIAL ALTERNATIVES

## ❑ **MRS Group 2** (Figure 3)

- Comprises MRS 05B North, MRS 05E, MRS 08A and 08B.
- MEC found, low to no pedestrian traffic area.

❑ The table on the next slide presents the detailed analysis of alternatives for MRS Group 2.



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# DETAILED ANALYSIS OF ALTERNATIVES

## MRS GROUP 2

**Table 8.2: Summary of Detailed Analysis of Explosive Hazards Remedial Alternatives – MRS Group 2**

	Screening Criterion	Alternative 1: No Further Action	Alternative 2: Administrative Land Use Controls	Alternative 3: Physical Land Use Controls	Alternative 5: MEC Removal to 2 feet with LUCs
Threshold	Overall Protection of Human Health and Environment <sup>1</sup>	○	●	●	●
	Compliance with ARARs	●	●	●	●
Balancing	Long-Term Effectiveness	○	◐	◐	●
	Reduction of Toxicity, Mobility and Volume Through Treatment <sup>2</sup>	○	○	○	●
	Short-Term Effectiveness	○	●	●	◐
	Implementability:				
	Technical Feasibility	●	●	◐	●
	Administrative Feasibility	●	◐	◐	◐
	Availability of Materials and Services	●	●	●	●
	Cost <sup>3</sup>	\$0.00	\$486,000	\$1,680,000	\$3,546,000
Modifying <sup>4</sup>	State Acceptance	TBD	TBD	TBD	TBD
	Community Acceptance	TBD	TBD	TBD	TBD

● Favorable ('YES' for threshold criteria)

◐ Moderately Favorable

○ Not Favorable ('NO' for threshold criteria)

<sup>1</sup> – Favorable for this criterion requires achieving 'Acceptable' site conditions using the RMM (see Appendix B of the FS Report).

<sup>2</sup> – For MEC, this criterion addresses reduction of volume of MEC.

<sup>3</sup> – Costs were developed using RACER. O&M for a 30-year duration is included, as applicable, for an alternative.

<sup>4</sup> – The Modifying criteria of state and community acceptance are 'To Be Determined (TBD)' following review and input from these parties.

# PREFERRED ALTERNATIVE FOR MRS GROUP 2

**Alternative 2: Administrative LUCs**, is the recommended preferred remedial alternative to achieve the explosive hazards RAOs for MRS Group 2.

- It is protective of human health and the environment and is compliant with ARARs in that close coordination with NPS regarding the installation of signs would not cause a take to any protected species.
- It is effective in the short term, is favorable overall for implementability, and is the lowest cost alternative.
- While this alternative does not remove MEC, it sufficiently alters behavior to limit interactions, and state and community acceptance is likely achievable given that these are low/no pedestrian traffic areas.
- Alternative 5 is favorable for as many CERCLA criteria as Alternative 2, but it costs more than seven times as much, and active MEC removal and destruction is more disruptive to the park than necessary for these low/no pedestrian traffic areas of MRS Group 2.



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# EVALUATION OF REMEDIAL ALTERNATIVES

## ❑ **MRS Group 3** (Figure 4)

- Comprises MRS 05G and MRS 10.
- Special situations where MEC found in high pedestrian traffic, but area has significantly been altered by storms, or munitions on the shore have historically been observed.

❑ The table on the next slide presents the detailed analysis of alternatives for MRS Group 3.



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# DETAILED ANALYSIS OF ALTERNATIVES

## MRS GROUP 3

**Table 8.3: Summary of Detailed Analysis of Explosive Hazards Remedial Alternatives – MRS Group 3**

	Screening Criterion	Alternative 1: No Further Action	Alternative 2: Administrative Land Use Controls	Alternative 5: MEC Removal to 2 feet with LUCs
Threshold	Overall Protection of Human Health and Environment <sup>\1</sup>	○	●	●
	Compliance with ARARs	●	●	●
Balancing	Long-Term Effectiveness	○	◐	◐
	Reduction of Toxicity, Mobility and Volume Through Treatment <sup>\2</sup>	○	○	◐
	Short-Term Effectiveness	○	●	◐
	Implementability:			
	Technical Feasibility	●	●	◐
	Administrative Feasibility	●	◐	◐
	Availability of Materials and Services	●	●	●
	Cost <sup>\3</sup>	\$0.00	\$504,000	\$4,902,000
Modifying <sup>\4</sup>	State Acceptance	TBD	TBD	TBD
	Community Acceptance	TBD	TBD	TBD

- Favorable ('YES' for threshold criteria)
- ◐ Moderately Favorable
- Not Favorable ('NO' for threshold criteria)

\1 – Favorable for this criterion requires achieving 'Acceptable' site conditions using the RMM (see Appendix B of the FS Report).

\2 – For MEC, this criterion addresses reduction of volume of MEC.

\3 - Costs were developed using RACER. O&M for a 30-year duration is included, as applicable, for an alternative.

\4 – The Modifying criteria of state and community acceptance are 'To Be Determined (TBD)' following review and input from these parties.

# PREFERRED ALTERNATIVE FOR MRS GROUP 3

**Alternative 2: Administrative LUCs**, is the recommended preferred remedial alternative to achieve the explosive hazards RAOs for MRS Group 3.

❑ Alternative 2 was ranked favorable for more CERCLA criteria than were the other alternatives.

- It is protective of human health and the environment and is compliant with ARARs in that close coordination with NPS regarding the installation of signs would not cause a take to any protected species.
- It is effective in the short term, and favorable overall for implementability. While it does not remove MEC (or mitigate the potential for MEC to continue to wash up onshore or be exposed via erosion), it educates the public concerning the potential hazards and is relatively low cost.
- Note that fencing was not an option for the beach due to the use and ocean environment and further, that any cleanup would not stop the occasional munition from washing ashore from storm events. Finally, the RI did not find MEC along the shoreline to warrant a cleanup recommendation for this area.



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# NEXT STEPS

☐ Public comments will be taken under consideration and responses will be prepared.

☐ Prepare a Decision Document that documents the remedial alternatives selected.

➤ Public comments received will be summarized and the responses provided in the Responsiveness Summary section of the Decision Document. Note that comments provided during this virtual meeting can be included as a formal comment if requested by the commenter.

☐ The Final Decision Document will be placed in the library and online:

<https://www.nan.usace.army.mil/Missions/Environmental/Environmental-Remediation/Formerly-Used-Defense-Sites/Fort-Hancock>



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# QUESTIONS OR COMMENTS

USACE invites questions and comments on this Proposed Plan throughout the public comment period (through August 13, 2021).

These can be submitted in writing or via email to:

**Kathleen Cuzzolino, Project Manager**

**U. S. Army Corps of Engineers**

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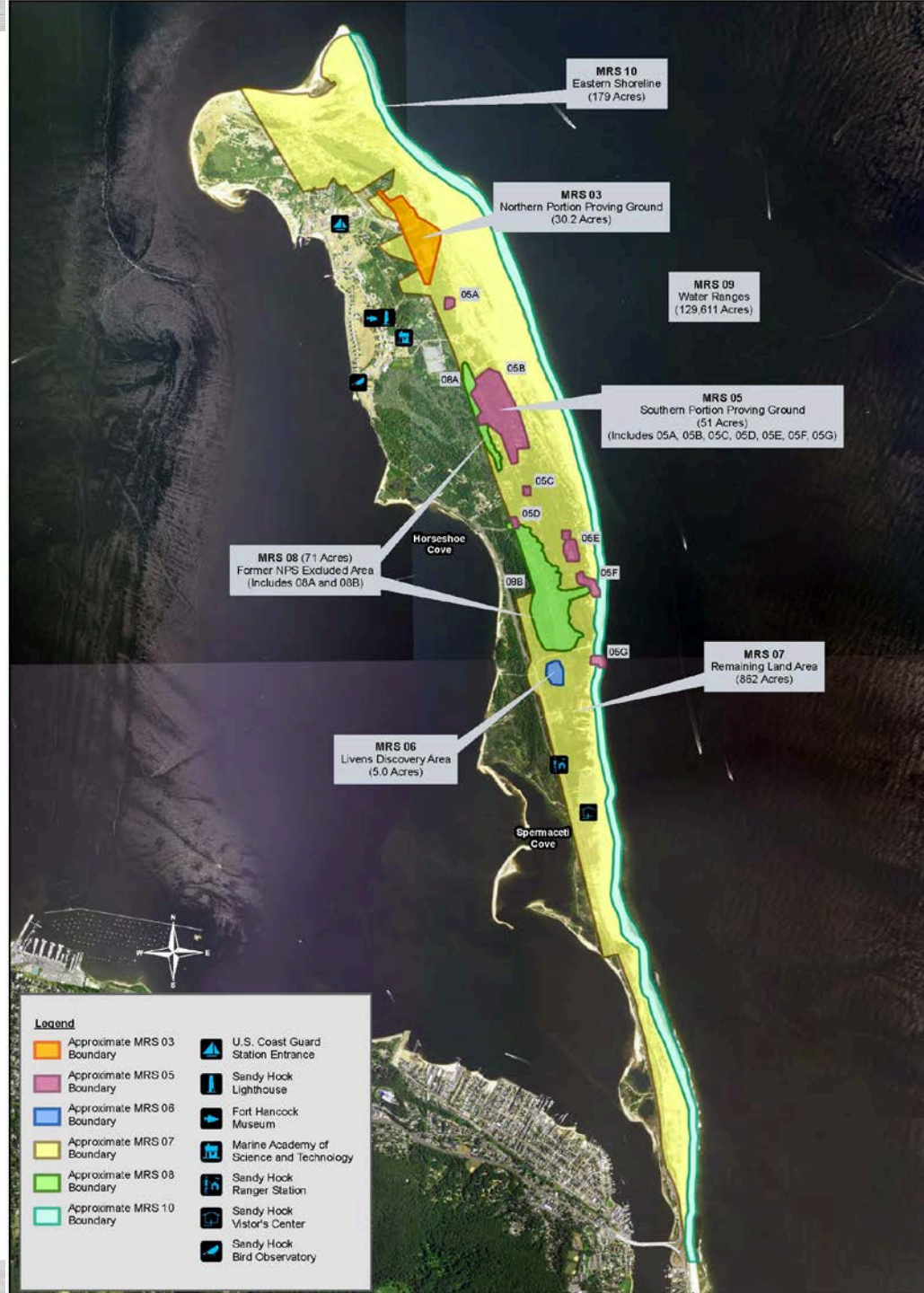
**Phone: (917) 790-8330**



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# FIGURE 1 — SITE FIGURE



## FIGURE 2 – MRS GROUP 1



# FIGURE 3 – MRS GROUP 2



# FIGURE 4 – MRS GROUP 3

