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**PROPOSED PLAN**  
**Camp Wellfleet Formerly Used Defense Site**  
**Wellfleet, Massachusetts**

**OVERVIEW**

This **Proposed Plan** was prepared for the Former Camp Wellfleet **Formerly Used Defense Site (FUDS)** to satisfy Section 117 (a) of the **Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)**. The primary purpose of this Proposed Plan is to present the preferred remedial alternative to mitigate unacceptable explosive risks due to **munitions and explosives of concern (MEC)** that may remain within the Camp Wellfleet FUDS, and provide the rationale for the selection. The Proposed Plan highlights the key factors that led to identifying the preferred alternative of the U.S. Army Corps of Engineers (**USACE**).

The **Remedial Investigation Report (USACE, 2019) (RI Report)** documented the site characterization work that determined the nature and extent of contamination and identified the remaining risks/hazards, and the **Feasibility Study (FS Report) (USACE, 2021)** developed and analyzed various response actions to mitigate the unacceptable explosive risks due to MEC.

This project falls under the Military Munitions Response Program (**MMRP**) of the Defense Environmental Restoration Program (**DERP**). The Department of Defense (**DoD**) established the MMRP to address **munitions constituents (MC)**, and MEC (**unexploded ordnance [UXO]**, **discarded military munitions [DMM]**, and MC in high enough concentrations to pose an explosive threat) that are located on certain properties, including FUDS. 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 Camp Wellfleet FUDS in accordance with CERCLA and the **National**

**Oil and Hazardous Substances Pollution Contingency Plan (NCP)**, 40 C.F.R. Part 300. The **Massachusetts Department of Environmental Protection (MassDEP)** is the lead regulator at the Camp Wellfleet FUDS.

*USACE encourages the public to participate in the discussion of remedial alternatives presented in this Proposed Plan (see Exhibit 1).*

The preferred alternative may be modified, or another alternative selected, based on new information acquired during the comment period.

Words and acronyms shown in **bold font** (initial use) are defined in the Acronyms List and/or Glossary of Terms provided in Appendix A.

**EXHIBIT 1**

**PUBLIC COMMENT PERIOD**  
January 3 through February 6, 2022

**VIRTUAL PUBLIC MEETING**  
To be Held the Evening of  
January 12, 2022, 6-8 pm

**USACE invites questions and comments on this Proposed Plan during the public comment period. These can be submitted in writing or via email to:**

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**This Proposed Plan is also available at the INFORMATION REPOSITORY:**

Town of Wellfleet Public Library  
55 W Main St, Wellfleet, MA 02667  
Jennifer Wertkin, Director  
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## 1.0 INTRODUCTION

USACE, in coordination with the MassDEP, has evaluated potential alternatives to mitigate unacceptable explosive risks due to MEC that may remain within the Camp Wellfleet FUDS.

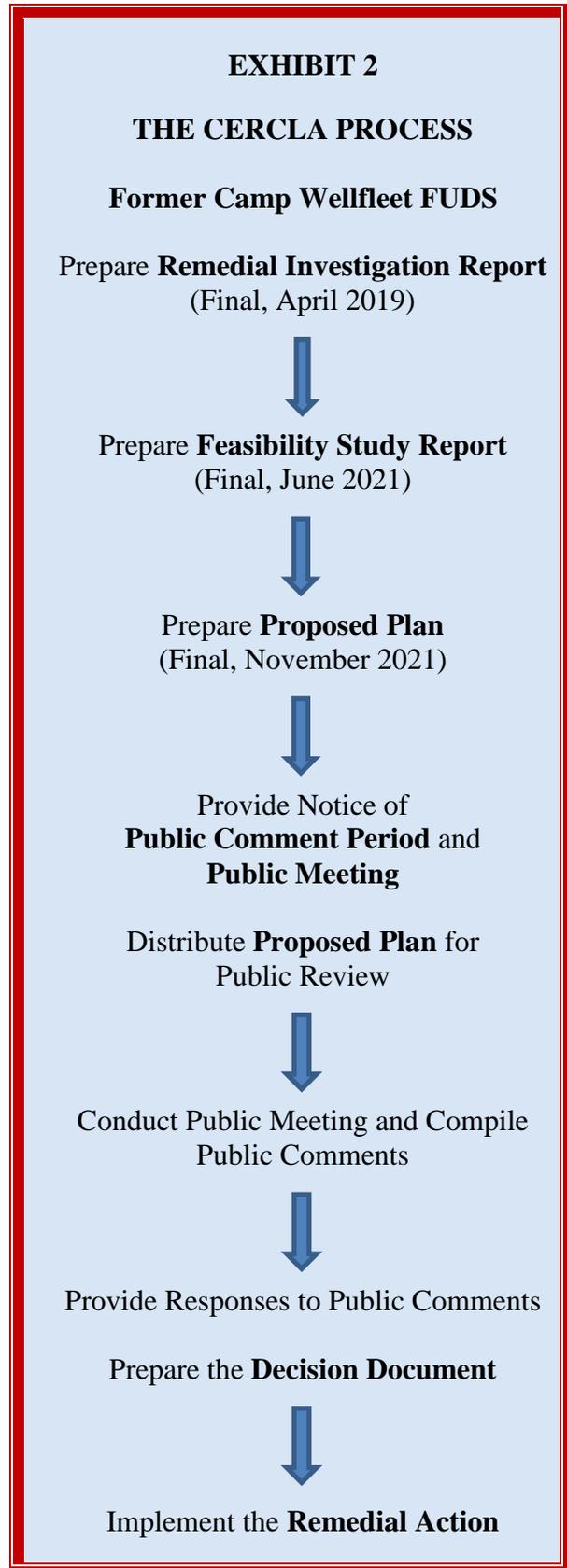
This Proposed Plan includes:

- Overview and Introduction
- Site background information (Section 2.0)
- Site Characteristics (Section 3.0)
- Scope and role of the remedial action (Section 4.0)
- Summary of site risks (Section 5.0)
- Remedial Action Objectives (RAOs) (Section 6.0)
- Summary of alternatives analyzed (Section 7.0)
- Evaluation of the alternatives (Section 8.0)
- Identification of the preferred alternatives (Section 9.0)
- Opportunities for community participation (Section 10.0)

This Proposed Plan summarizes information that can be found in greater detail in the RI and FS Reports, as well as other documents available to the public in the **Information Repository** file (see Exhibit 1), and the New England District website at:

<https://www.nae.usace.army.mil/Missions/Projects-Topics/Camp-Wellfleet-FUDS/>

USACE will finalize the preferred alternative selection for the Camp Wellfleet FUDS in a **Decision Document (DD)** after evaluating comments received from the public on this Proposed Plan and in coordination with MassDEP. USACE will address any public comments in a “Responsiveness Summary” that will be included in the DD, providing a response to all public comments received. The CERCLA sequence of events for the Camp Wellfleet FUDS is summarized in Exhibit 2.



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## 2.0 SITE BACKGROUND

### 2.1 Site Location

The Camp Wellfleet FUDS is in the Town of Wellfleet, Barnstable County, MA, approximately one mile east of South Wellfleet, MA, on the Cape Cod peninsula. The Camp Wellfleet FUDS consists of a total of 1,738 acres - of which approximately 1,688 acres are located in the **Cape Cod National Seashore (CCNS)** and 49.2 acres in the Town of Wellfleet, Barnstable County, Massachusetts. The site is accessible from U.S. Route 6, which is located just west of the site. Figure B-1 provides the site location (all figures are presented in Appendix B).

### 2.2 Site History

The Camp Wellfleet FUDS was previously used by the U.S. Army and U.S. Navy for training purposes. The 1,738-acre property was leased beginning in 1942 for an anti-aircraft artillery training base, with an artillery firing line located along the beach cliff. The site was used as such by the U.S. Army until June 1944, when it temporarily closed. From January 1945 through the end of World War II, the U.S. Navy used the base as a mobile radar training school supporting Navy night fighter training based in Quonset Point, Rhode Island, and for Dove missile training. From 1945 to 1961 the Camp also was used for training by National Guard troops and Active Army Reserve anti-aircraft artillery training units. Munitions used at the Camp Wellfleet FUDS included MK 65 “Dove” practice bombs, 60-millimeter (mm), 90mm, and 105mm projectiles, .30 and .50 caliber ammunition, grenades, and rifle smoke grenades.

Camp Wellfleet was declared as excess and officially closed on 30 June 1961. The Department of the Interior acquired the land through a Declaration of Taking in August 1961 to establish and develop the CCNS. The majority of the Camp Wellfleet FUDS is

currently owned by the **National Park Service (NPS)**. The Town of Wellfleet owns and manages approximately 49.2 acres.

### 2.3 Previous Investigations

Many investigations have been performed to characterize the site. The discovery of ordnance items at various locations required the execution of risk reduction actions between 1961 and 1998. In 1991, an Inventory Project Report/Preliminary Assessment determined the site was eligible under the FUDS program.

A 1994 **Archives Search Report (ASR)** categorized areas as containing MEC, potentially containing MEC, or not containing MEC (USACE, 1994). A 1998 **Topographic Engineering Center (TEC)** analysis of historical aerial photos included delineation of ground scars, excavations, and features such as bombing targets, gun emplacements, and ammunition supply points.

Based on the conclusions of the ASR and the findings of the TEC report, an **Engineering Evaluation and Cost analysis (EE/CA)** investigation was completed in May 2000 that identified inert munitions-related items, including four 1,000-pound MK 65 practice Dove missiles, and one 250-pound practice bomb (USACE, 2000). Recommended removal actions in the EE/CA included Clearance to Depth for selected areas and Institutional Controls (such as long-term monitoring and educational awareness) without Access Restrictions for all the remaining areas (USACE, 2013). Prior to implementing the EE/CA recommendations, **Oak Ridge National Laboratory (ORNL)** conducted a helicopter geophysical survey in March 2002 to map **Unexploded Ordnance (UXO)** and concentrations of metallic debris that could contribute to environmental degradation or pose a safety hazard. The survey identified 345 anomalies resulting in removal actions in several focused areas of

the Camp Wellfleet FUDS. Various additional removal activities were conducted from approximately 2003 through 2005 (Zapata, 2006), resulting in the excavation of over 1,600 anomalies and removal of over 3,400 pounds of **munitions debris (MD)**. However, only a single MEC item, a smoke grenade determined to be UXO, was encountered. A suspected Open Burn/Open Detonation area was investigated by installing a series of pits, and 1,040 pounds of MD was removed; no MEC was encountered. A removal action was conducted in an area to the east of a large parking lot, where abundant MD (mostly rocket parts) was removed (currently AOI-05). Limited MC soil sampling was conducted during these removal activities (2003-2004), but the efforts were insufficient to determine whether an MC release had occurred at the site.

More recently, a comprehensive RI was completed (USACE, 2019). The RI approach was based primarily on the ASR and EE/CA identified areas that were determined to have MEC, have a potential for MEC, or no potential for MEC. The TEC report further identified investigation areas for the RI. Consequently, the **Project Delivery Team (PDT)** developed **Areas of Interest (AOIs)** as the primary basis of investigation for the RI. The AOI term was used to be consistent with terminology used in the USACE FUDS Handbook on Delineation and **Munitions Response Site Prioritization Protocol (MRSPP)** Implementation (USACE, 2014).

The AOI configurations considered the original ASR and EE/CA areas, the results of subsequent removal actions, the aerial groundscar analysis, and the combining of areas of common past activities (or the screening out of areas where there was no evidence of MEC or MD), resulting in six (6) AOIs that formed the basis of the RI (see Figure B-2). Five of the AOIs are land-based, while one is ocean-based.

The PDT determined that there were sufficient data from the previous investigations to make MEC nature and extent evaluations using the existing data, i.e., no additional MEC field investigation was required for the RI. For the ocean range fan AOI-06 (see table below), no field investigation was conducted during the RI because MEC presence was assumed after approximately 20 years of firing into the ocean.

The table below summarizes the resulting AOIs, indicating the investigation conceptual site model (CSM) and munition findings associated with each.

AOI	CSM	Munition Findings	Acreage
AOI-01	Burial Pits, Possible Landfill	No MEC. Miscellaneous MD.	33.1
AOI-02	Artillery Firing Line—for anti-aircraft artillery	MEC (76mm anti-aircraft artillery). Miscellaneous MD.	275.0
AOI-03	Ammunition Supply Points, Groundscars	MEC (rifle smoke grenade). Miscellaneous MD.	120.2
AOI-04	Bomb Targets and Small Burial Area	No MEC. Miscellaneous MD.	141.8
AOI-05	Rocket Range and Small Arms Range	MD indicative of MEC (high explosive frag from 3.5-in rockets and 105mm projectiles). Miscellaneous MD.	56.10
AOI-06	Range Fan of Artillery Targets in Ocean	MEC presence assumed based on 20 years of firing. Potential types: 76mm anti-aircraft artillery, 90 and 105mm projectiles, 3.5" rockets.	167,856

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### 3.0 SITE CHARACTERISTICS

The environmental setting for the Camp Wellfleet FUDS comprises beaches and dunes, heathlands and grasslands, and forested areas. The area is currently used for recreational sunbathing, surfing, fishing, hiking, hunting, and picnicking. Land use at the site is projected to remain recreational.

The Atlantic Ocean borders the Camp Wellfleet FUDS to the east, and the site also includes various small streams, freshwater emergent wetlands, a freshwater forested wetland, and estuarine and marine wetlands along the coast. The Camp Wellfleet FUDS is listed in the **Natural Heritage & Endangered Species Program (NHESP)** as a significant natural community. In addition, there are 32 rare or endangered species protected under the Massachusetts Endangered Species Act that are known to exist at the National Seashore. Sixteen plant communities are within the boundary of the Camp Wellfleet FUDS, and the NHESP classifies two areas as natural communities of biodiversity conservation interest. There are 25 Federally Endangered Species known to exist (seasonally) at the CCNS. The Camp Wellfleet FUDS also includes the Marconi Station site, which is an historical and cultural resource.

#### 3.1 Nature and Extent of Contamination

The goal of the RI was to integrate the multiple investigation phases and findings and determine the nature and extent of MEC and MC contamination for each AOI at the Camp Wellfleet FUDS, and to recommend whether further actions were warranted.

Based on the conclusions of the RI Report, there is no unacceptable MC risk to either human or ecological receptors at any land-based AOI. The ocean-based AOI-06 was not sampled for MC in accordance with the approved approach as sediment

contamination would likely be diluted in the open ocean. However, it was determined that explosive risks may remain in the surface and subsurface soil or within the off-shore waters of the Camp Wellfleet FUDS. Following MEC risk evaluations of explosive risks for all site AOIs (presented in the RI), three AOIs were found to present unacceptable explosive hazard conditions that required remedial actions to mitigate the explosive risks they present:

- AOI-02
- AOI-05
- AOI-06

These AOIs are shown in Figures B-3, B-4, and B-5, respectively.

Three AOIs were categorized as presenting acceptable site conditions with regard to explosive risks (AOI-01, AOI-03, and AOI-04).

Other site characteristics impact the analysis of remedial alternatives for the AOIs. For example, any remedial alternative must consider any state or Federally threatened or endangered species within or near the Camp Wellfleet FUDS. The impact of these species on the analysis of remedial alternatives to mitigate unacceptable explosive risks remaining to the public, is addressed in Section 6.2.

### 4.0 SCOPE AND ROLE OF THE REMEDIAL ACTION

The RI Report identified unacceptable explosive risks posed by the possible presence of MEC at the Camp Wellfleet FUDS. The FS addressed this issue, evaluating various remedial action alternatives to mitigate explosive risks at the identified AOIs. The scope of the **remedial action** that addresses potential explosive risks posed by MEC at the identified AOIs is to reduce the potential for encountering MEC at the Camp Wellfleet FUDS, and return

these areas to a condition that eliminates unacceptable explosive risks to workers and visitors.

USACE anticipates the proposed remedial action will be the final action for the Camp Wellfleet FUDS.

## 5.0 SUMMARY OF SITE RISKS/HAZARDS

This discussion summarizes the conclusions of the RI Report with regard to both MC risk and MEC explosive risks that may remain within the Camp Wellfleet FUDS.

### 5.1 MC Risks

A comprehensive MC soil sampling program was conducted during the RI, with surface and subsurface soil samples collected from areas of the site considered to potentially contain the largest MC contaminant concentrations (areas where previous investigations identified MEC or MD). The analytical parameters, tailored to past site activities, included metals and explosives compounds. In addition to the RI sampling program, data from soil samples collected during previous investigations (2003-2004 sampling) were also integrated into the assessment of risk. As noted in Section 3.1, the ocean-based AOI-06 was not sampled for MC in accordance with the approved investigative approach.

These MC sampling results indicated that project screening levels for soil were not exceeded, and therefore, no quantitative **human health risk assessment (HHRA)** or **screening level ecological risk assessment (SLERA)** was required. Accordingly, the RI Report concluded that there is no unacceptable MC risk to either human or ecological receptors at the Camp Wellfleet FUDS.

### 5.2 MEC Explosive Risks

With regard to explosive risks that may remain at the Camp Wellfleet FUDS, MEC risk evaluations were determined for all AOIs

using the December 2016 USACE **Risk Management Matrix Methodology (RMM)** (USACE, 2017). The RMM uses four matrices to define acceptable and unacceptable risk from MEC hazards based on the likelihood of an encounter, the severity of incident, and the sensitivity of interaction based on expected land use activities. The table below summarizes the RMM results for those AOIs that were designated as having an unacceptable MEC risk; these AOIs are considered to require remedial actions to mitigate the explosive risks they present.

AOI	Likelihood of Encounter	Severity of Incident	Likelihood of Detonation	Site Condition
02	Likely	A	2	Unacceptable
05	Likely	A	2	Unacceptable
06	Seldom	B	2	Unacceptable

*“Severity of Incident” letter score (from A to D) applied based on assessment of the likelihood of encounter and the severity of an unintentional detonation. ‘A’ represents conditions most likely to result in unacceptable risk, while ‘D’ represents conditions most likely to result in acceptable scenarios.*

*“Likelihood of Detonation” numerical score (from 1 to 3) applied based on assessment of sensitivity of the MEC items and the likelihood for energy to be imparted to the item during an encounter. ‘1’ represents the highest likelihood of detonation, while ‘3’ represents the lowest likelihood.*

### 5.3 Summary of Site Risks/Hazards

Based on the results of the RI, no unacceptable MC risks are present at any of the Camp Wellfleet FUDS AOIs.

Based on the RMM results, the following AOIs are categorized as presenting acceptable site conditions with regard to explosive risks, and therefore require no action:

- AOI-01, AOI-03, and AOI-04

However, based on the RMM results and the historical knowledge of past practices, the following AOIs are categorized as presenting unacceptable explosive risks due to MEC

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potentially remaining within the Camp Wellfleet FUDS:

- AOI-02, AOI-05, and AOI-06

For these AOIs, it is the current judgment of USACE that the preferred alternatives identified in this Proposed Plan, or one of the other alternatives considered in the detailed analysis in Section 8.0 (other than No Action), are necessary to protect human health or the environment from the actual or threatened hazards described above.

## 6.0 REMEDIAL ACTION OBJECTIVES

**Remedial Action Objectives (RAOs)** describe what the preferred remedial action is expected to accomplish, specifying the contaminants, military munitions, and media of concern, receptors and exposure pathways, and preliminary remediation goals that permit a range of treatment alternatives to be developed.

### 6.1 Site-Specific RAOs

For the Camp Wellfleet FUDS, remedial alternatives were developed for unacceptable explosive risks posed by MEC potentially remaining within specific AOIs of the Camp Wellfleet FUDS. Combining the affected media, the exposure pathways, and the project goals, the site-specific RAOs are:

- For land-based AOI-02 and AOI-05: eliminate unacceptable risk due to the presence of MEC to a depth of 3 feet **below ground surface (bgs)** to address direct contact by park personnel and recreational users, and direct contact of MEC in the subsurface to a depth of 6 feet bgs by authorized maintenance workers, such that acceptable conditions are achieved.
- For ocean-based AOI-06: eliminate unacceptable risk due to the presence of MEC on or beneath the sea floor

(approximately 2 ft bgs) to address direct contact by park personnel, park visitors (waders, swimmers), and recreational divers, to a water depth of 120 feet, and the potential for interaction resulting from the use of fishing nets to the maximum depth of the AOI, such that an acceptable condition is achieved.

### 6.2 Applicable or Relevant and Appropriate Requirements

**Applicable or Relevant and Appropriate Requirements (ARARs)** are any substantive Federal or State standards, requirements, criteria, or limitations that are determined to be legally applicable or relevant and appropriate to a CERCLA site or action. The following ARARs were identified during the development of remedial alternatives in the FS.

Federal location-specific ARARs:

- Endangered Species Act [16 USC 1538(a)(1)(B) (1991, as amended); 16 USC 1536(a)(2); 50 CFR 402.01(a); 50 CFR 402.14(i)] which prohibits action that would be considered a "take" of a threatened or endangered species. Federally Threatened and Endangered Species under this Act found or observed at Camp Wellfleet, include species such as Piping Plovers, Red Knot, Northern Long-eared bat, Leatherback Sea turtles, and Tiger Beetles. Since some of these species live, feed and nest on the beach and dunes where munitions may be found, without specific provisions, remediation through removal and subsequent destruction of MEC, could cause a take of the species.
- Migratory Bird Treaty Act of 1918 [16 U.S.C. 703(a)] which protects bird species, their nests and their eggs from unlawful possession, transport, and harm and prohibits action that would be considered a "take" of a protected migratory bird species without prior

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authorization by the Department of Interior **U.S. Fish and Wildlife Service (USFWS)**. Species listed in the Migratory Bird Treaty Act that have been found and observed at Camp Wellfleet are Piping Plovers, American Bitterns, and Roseate Terns. Since these species live, feed and nest on the beach and dunes where munitions can be found, without specific provisions, remediation through removal and subsequent destruction of MEC could adversely impact critical habitat or result in a take of listed species through the implementation of these actions..

- Clean Water Act (Sections 404/401). 40 CFR Part 230.10, which restricts discharge of dredged or fill material if there is a practicable alternative which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. Land-disturbing activities (e.g., excavation) without specific provisions could adversely impact aquatic ecosystems and wetlands. The accommodations to prevent this would be presented along with the appropriate remedial alternative proposed during the evaluation. There will be no conversion of aquatic resources to uplands. Appropriate for any remedial alternative where land-disturbing activities (e.g., excavation) with the potential to impact surface waters from storm water runoff will be implemented using erosion and sedimentation controls to comply with storm water control and aquatic resource alteration requirements.

Federal action-specific ARARs:

- Resource Conservation and Recovery Act (RCRA) [40 CFR 264.601/602/603] which establishes requirements applicable to operators of open

burning/open detonation of military munitions/explosive wastes, and applies to the possible movement of munitions.

State specific ARARs:

- MassDEP Endangered Species Act, Code of Massachusetts (CMR) regulations 321 CMR 10.04(1), which protects endangered plant species and endangered, threatened and nongame wildlife populations in Massachusetts. Prohibits action that would be considered a "take" of a threatened or endangered species. At Camp Wellfleet, these include American Bittern, Roseate Terns, Red Knot, Loggerhead Shrikes, Eastern Box Turtles, Sandplain Gerardia, and others. Since these species live, feed and nest on the beach and dunes where munitions can be found, without specific provisions, remediation through removal and subsequent destruction of MEC, could cause a take of the species.
- Massachusetts Wetlands Protection Act, 310 CMR 10.25(5)-(7), 310 CMR 10.27(3), (6), & (7), 310 CMR 10.28(3) & (6), 310 CMR 10.30 (4) & (6), and 310 CMR 10.34 (4)-(5), substantive provisions which protect land under the ocean, coastal beaches, dunes, and lands containing shellfish. Appropriate for remedial actions that may impact the stated coastal regions.
- Massachusetts Waterways Regulation, 310 CMR 9.40(2)(b) (1st sentence), 310 CMR 9.40(3)(b) (1st sentence), substantive provisions which require that excavation activity be such as to minimize adverse impacts on shellfish beds, fishery resource areas, and submerged aquatic vegetation, and requires that excavation be a sufficient distance from the edge of adjacent marshes to avoid slumping. Appropriate for remedial actions that may impact the stated coastal regions.

- Massachusetts Contingency Plan (MCP) Upper Concentration Limits. 310 CMR 40.0996, which establishes UCLs for soil and groundwater which, if exceeded indicate the potential for significant risk of harm to public welfare and the environment (limited to Table 6 UCLs for: antimony, lead, nickel, zinc, cyclotrimethylenetrinitramine, & 2,4-dinitrotoluene).
- Massachusetts Division of Water Pollution Control; 401 Water Quality Certification, 314 CMR 9.06(2)(1st sentence), 314 CMR 9.07(1)(a)(1st sentence).
- Massachusetts Surface Water Quality Standards, which limit or prohibit discharges of pollutants to surface waters to ensure that surface waters are protected, substantive portions of 314 CMR 4.04(1), 314 CMR 4.05(4)(a), 4.05(3)(b), & 4.05(5).
- Ocean Sanctuaries Act M.G.L. c. 132A, ss. 15 (3) & (4), which defines and includes measures to protect Ocean Sanctuaries, including the Cape Cod and Islands Ocean Sanctuary.

Pursuant to CERCLA/NCP, compliance with ARARs is a threshold requirement that a remedial alternative must meet in order to be eligible for selection.

The application of specific ARARs to each alternative is addressed in the detailed Analysis of Alternatives discussions in 8.1, 8.2, and 8.3.

## **7.0 SUMMARY OF REMEDIAL ALTERNATIVES**

This section presents a summary of the remedial alternatives developed to meet the RAOs for the identified explosive risks that may remain at the Camp Wellfleet FUDS. As detailed in the FS, defined remedial alternatives were screened against the short and long-term aspects of three broad criteria: effectiveness, implementability, and cost.

### **7.1 Effectiveness**

This criterion was evaluated with respect to effectiveness in protecting human health and the environment, and providing reduction in toxicity, mobility, and volume. The short-term (construction and implementation period) and long-term components (effective period after the remedial action is complete) were also evaluated.

### **7.2 Implementability**

This criterion was evaluated as a measure of both the technical and administrative feasibility of constructing, operating, and maintaining a remedial alternative. Technical feasibility is the ability to construct, operate and maintain an alternative, while administrative feasibility refers to the ability to obtain approvals from agencies, and the availability of required goods and services.

### **7.3 Cost**

The cost of each alternative was also evaluated. Prior estimates, sound engineering judgment, and real-world costs based on previous implementation of some of the remedial alternatives on similar sites, were used to evaluate one alternative against another.

### **7.4 Explosive Risks Remedial Alternatives**

The FS identified and screened general categories of technologies for addressing MEC. General response actions to satisfy the

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RAOs were developed, including **Land Use Controls (LUCs)** such as signage, fencing, or education and informational material, and MEC Removal (geophysical investigation of anomalies followed by removal/disposal).

For MEC removal, detection process options included analog magnetometers (mag & dig process), **Digital Geophysical Mapping (DGM)**, and **Advanced Geophysical Classification (AGC)**. It was concluded that the analog magnetometer and AGC options were the most viable primarily because they require minimal vegetation removal and NPS maintains cutting limitations to minimize disturbance to sensitive plant communities at the Camp Wellfleet. A MEC removal depth component was also developed, with 3 feet bgs a practical maximum for park visitor activities, while an educational LUC would provide for notification to authorized park workers (utility or construction contractors), who may need to achieve greater depths (e.g., notifications of the intent to safely conduct such activities).

Based on the explosive risks mitigation technologies reviewed, four remedial alternatives were identified in the FS to address the potential unacceptable explosive risks, as described below.

#### **Explosive Risks Alternative 1: No Action**

The No Action alternative would leave any MEC items potentially present, in place, without further investigation or removal. This alternative does not provide for additional investigation and does not provide for any active or passive LUCs to reduce the potential for exposure. Consequently, the FS analysis concluded that Alternative 1 failed key elements of the effectiveness and implementability criteria. However, in accordance with the NCP, this alternative must be evaluated against the threshold and balancing criteria in the detailed analysis as a baseline for comparison (see Section 8.0).

#### **Explosive Risks Alternative 2: Land Use Controls (LUCs)**

Alternative 2: Land Use Controls, is the recommended preferred remedial alternative to achieve the explosive risks RAOs for each of the AOIs (AOI-02, AOI-05, and AOI-06).

LUCs, administrative and physical, can include signage, fencing, environmental covenants, and/or education to limit access. As developed for the Camp Wellfleet FUDS, Alternative 2 may include the use of signage installed in appropriate locations to limit access by providing awareness of potential hazards, education (training, pamphlets, flyers) concerning the hazards suspected to be present within the AOI, and periodic visual inspections to evaluate changing site conditions. These LUCs are designed for both land and ocean AOIs to limit land or resource use by providing information that helps modify or guide human behavior at the site. Specific details of the LUCs, including type, frequency, duration, etc., will be provided in a LUC Implementation Plan (LUCIP).

This alternative includes the requirement to ensure the safe conduct of any intrusive activity conducted by authorized park maintenance or construction workers. While the Army cannot impose restrictive covenants on FUDS property, the Army can work with the NPS and the Town of Wellfleet to ensure notifications (e.g., no intrusive work greater than 3 feet bgs without adequate safety measures) are implemented and maintained.

For the ocean AOI, LUCs may include the use of signage to limit access by providing awareness and education (training, pamphlets, flyers, updating nautical charts) concerning the hazards potentially present within the AOI. However, the signage would be installed on land, and as a practical matter, may overlap with any signage requirements for the land AOIs.

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The FS analysis concluded that while Alternative 2 is not effective in reducing the volume of MEC and does not allow for **Unlimited Use/Unrestricted Exposure (UU/UE)**, it is effective and implementable. Accordingly, the LUCs alternative was retained for the detailed analysis because it meets key elements of the effectiveness and implementability criteria.

**Explosive Risks Alternative 3: Partial MEC Removal with LUCs**

For the land AOIs, Alternative 3 entails conducting a partial MEC removal down to 3 feet bgs, with subsequent MEC destruction, utilizing a MEC detection and removal methodology based on the site conditions of the specific removal areas. The occurrence of threatened and endangered species, or significant natural communities including wetlands may dictate whether mag & dig or AGC methods, or manual or mechanized excavation, is more appropriate. MEC removal for land-based AOIs would not include areas where vegetation cutting is prohibited or areas that are paved and therefore have no interaction between possible MEC items and a receptor.

For AOI-02, the intention is to address the potential for DMM that may have been associated with the firing line activities. This 39.2 acre partial removal area is based on a buffer zone on each side of the old firing line road: extending eastward from the old road to the top of the bluff, and extending westward 150 feet from the road. While DMM may exist in the bluff leading down to the shoreline, no removal activity on the bluff is included in this alternative based on worker safety considerations and the intent to minimize bluff erosion that such activity may promote.

For AOI-05, the removal area would include all areas except for the paved parking lot and the previous 5-acre removal area. While MEC could exist in the bluff leading down to

the shoreline, no removal activity in the bluff is included in this alternative based on worker safety considerations and the intent to minimize bluff erosion that such activity may promote.

For the ocean AOI, the partial removal would include items on the sea floor and approximately 2 feet beneath it, and the footprint would extend to the 120 ft recreational diver depth limit. The MEC detection and removal methodology for the ocean AOI would be based on the specific sea floor depth of the removal area.

Alternative 3 also includes implementing the educational and notification requirements LUCs, as described in Alternative 2.

Alternative 3 does not allow for UU/UE for either the land or water AOIs. However, the FS analysis concluded that for the land AOIs, Alternative 3 met key elements of the effectiveness and implementability criteria and was retained for the detailed comparative analysis in Section 8.0. Alternative 3 can also be effective and implementable for the water AOI, and while it presents cost challenges, it was also retained for the detailed comparative analysis.

**Explosive Risks Alternative 4: MEC Removal to UU/UE**

The DERP Manual requires consideration of an alternative to remediate a site to a condition that allows for UU/UE, and therefore Alternative 4 includes complete removal and subsequent destruction of MEC such that LUCs would not be required.

While munition items at the Former Camp Wellfleet FUDS were mostly encountered at shallower depths, for the land AOIs, achievement of the UU/UE standard under Alternative 4 would require excavations to 5 feet bgs in AOI-02, and 4 feet bgs in AOI-05, based on the maximum depths of MEC or MD finds in each area. However, a conservative depth of 6 feet bgs was used for

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Alternative 4 to account for utility or construction work that may require depths greater than 5 feet bgs. Areas of unstable sandy soil conditions at this depth may make the excavation necessary for MEC removal problematic, as the use of heavy excavation equipment and safety shoring, may be required. While manual excavation of shallower soils can minimize environmental impacts, a full removal that includes all AOI acreage to a depth of 6 feet bgs would require heavy equipment and the potential for significant environmental impacts.

For the ocean AOI, the deepest possible interaction of receptor and source would be a deep sea fishing net, which may be deployed to depths exceeding 500 feet. Therefore, UU/UE would involve a sea floor MEC removal of the entire 167,856 acre ocean AOI.

The FS analysis concluded that for the land AOIs, UU/UE Alternative 4 is not effective in the short term, is not technically or administratively feasible, and is excessively costly. For the ocean AOI, the FS analysis concluded that UU/UE Alternative 4 is not effective in the short term, is not implementable, and is cost prohibitive. Therefore, Alternative 4 was not retained for the detailed comparative analysis in Section 8.0.

## 8.0 EVALUATION OF ALTERNATIVES

The remedial alternatives retained for the detailed analysis are summarized below.

Risk or Hazard	Remedial Alternative Retained
Explosive Risks	Alternative 1: No Action
	Alternative 2: Land Use Controls
	Alternative 3: Partial MEC Removal with LUCs

In the detailed FS analysis, each alternative was assessed against nine evaluation criteria (Exhibit 3) that have been developed by the USEPA to address CERCLA requirements and technical and policy considerations important for selecting among remedial alternatives. The nine criteria are divided into three categories; threshold, balancing and modifying, and are used to evaluate the remedial alternative individually, and then against one another, in order to select a preferred alternative. This discussion summarizes the FS analysis conclusions per each AOI.

### 8.1 AOI-02 - Analysis of Remedial Alternatives

Table 8.1 summarizes the analysis described below for AOI-02.

#### Threshold Criteria

Threshold criteria must be met. Under Alternative 1 (No Action), no remedial action would be taken, and potential explosive risks are not mitigated. Therefore, Alternative 1 does not result in acceptable conditions and it is not protective of human health and the environment. For Alternative 2 (LUCs), the post-remedy RMM indicates that educational awareness designed to help modify human behavior at the site would educate visitors about the likelihood of encountering and

### EXHIBIT 3 NINE EVALUATION CRITERIA

#### **Threshold Criteria:**

1) *Overall Protectiveness of Human Health and the Environment*- alternative shall be protective of human health and the environment.

2) *Compliance with ARARs*- alternative must meet cleanup standards, standards of control, or other requirements that pertain to the contaminants, remedial action, or the remedial location that are found in Federal and State environmental statutes, regulations, and other requirements that pertain to the site, or a waiver must be justified.

#### **Balancing Criteria:**

3) *Long-term Effectiveness and Permanence*- considers the ability of an alternative to maintain protection of human health and the environment over time.

4) *Reduction in Toxicity, Mobility, or Volume through Treatment*- evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.

5) *Short-Term Effectiveness*- considers the length of time needed to implement an alternative and the risks the alternative poses to workers, residents, and the environment during implementation.

6) *Implementability*- considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.

7) *Cost*- includes the estimated capital and annual operations and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +/- 50 percent.

#### **Modifying Criteria:**

8) *State/Support Agency Acceptance*- considers the acceptance of the state or support agency of the preferred alternative.

9) *Community Acceptance*- considers the acceptance of the community of the preferred alternative.

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imparting energy to a potential MEC item, and how to respond if such items are encountered, and therefore acceptable conditions are achieved. This is based on the expectation of limited or rare occurrences of pedestrians ignoring signage to interact with potential MEC items. Therefore, Alternative 2 is protective of human health and the environment, using LUCs to limit access to the AOI-02 areas. For Alternative 3 (Partial MEC Removal with LUCs), the post-remedy RMM indicates that MEC removal to 3 feet bgs in the areas shown in Figure B-3, reduces the likelihood of encountering and imparting energy to a potential MEC item by physically removing MEC. Consequently acceptable conditions are achieved based on the mitigated ability of pedestrians to encounter potential MEC items. Therefore, Alternative 3 is protective of human health and the environment based on MEC removal and LUCs to educate the public.

For Alternative 1, since no action will be taken, no ARARs will be triggered. For Alternative 2, ARARs are related to the protection of wildlife species, but the minor disruptive activity (signage installation) of this alternative would be implemented to comply with these ARARs through coordination with NPS, USFWS, MassDEP, and the Town of Wellfleet to minimize any disturbance and not cause a take of these species. Because no MEC removals will be implemented under Alternative 2, ARARs related to soil removal, water quality, or air quality are not triggered. Therefore, Alternative 2 complies with ARARs. Prior to MEC removal under Alternative 3, the NPS, USFWS, MassDEP, and the Town of Wellfleet would be consulted to ensure that these actions would not cause a take of these species. ARARs relating to removal and transportation of MEC items will be complied with. Further, it is anticipated that any soil removal or placement surrounding MEC would have negligible impact, so

ARARs related to soil removal, water quality, or air quality are not triggered. Therefore, Alternative 3 complies with all ARARs.

### *Balancing Criteria*

Alternative 1 is not favorable for the long-term effectiveness criterion because potential explosive risks are not mitigated. It is not favorable in reducing MEC at the site, or in meeting the short-term effectiveness criterion because MEC removal objectives will not be met. Alternative 1 is favorable in meeting the implementability criterion in that there are no activities proposed.

Alternative 2 is moderately favorable in providing long-term effectiveness by informing the public of the explosive risks within the area, minimizing human exposure. But it would leave any MEC items in place, and while the access of human receptors to explosive risks is reduced, it is not eliminated. Alternative 3 is favorable for long-term effectiveness because it removes and destroys all MEC to 3 feet bgs within the partial removal area.

Alternative 2 is not favorable in reducing the volume of MEC at the site because it would leave any MEC items in place, without further investigation or removal. Alternative 3 will result in the reduction of the volume of MEC for the partial removal footprint of AOI-02. During the removal, any MEC that is identified would be properly treated and disposed.

Alternative 2 is favorable in meeting the short-term effectiveness criterion because no significant work would be performed beyond the installation of signs, and the community, workers, and the environment can be protected during implementation. The estimated time to meet the remedial objectives would be short. Alternative 3 is moderately favorable for short-term effectiveness because although the community, workers, and the environment

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can be protected during implementation, there is an increased short-term hazard to workers and the public because MEC will be removed. While MEC removal and destruction would cause some disruption to park activities, the estimated time to meet the remedial objectives would be relatively short, unless a significant number of MEC items are discovered.

Alternative 2 is favorable in meeting the implementability criterion as it is technically feasible to install signage, produce educational materials, and provide notifications of intrusive work, and the materials and services to implement this alternative are readily available. Alternative 3 is moderately favorable for implementability, because while the materials and services are readily available and it is feasible to conduct MEC removals to 3 feet bgs, the administrative feasibility may be challenging if NPS does not permit the temporary disruption to park activities and the subsequent impacts to park workers, visitors, and the potential increased bluff erosion, that may result from MEC removal activities in AOI-02.

Alternative 1 has no associated costs. The cost to implement Alternative 2 is relatively low, approximately \$153,500 in capital costs plus \$476,300 for 30-years of operation and maintenance (O&M) for a total of \$629,800. (Note that 30 years is used for estimation purposes because the actual length of the given activity cannot be determined and EPA guidance allows a 30 year estimate to be used for the comparison of alternatives (e.g., how long O&M of signage must be maintained). The cost to implement Alternative 3 is moderate to high based on working in areas of moderate to high pedestrian traffic. The total estimated cost for Alternative 3 is approximately \$1,473,500 in capital costs plus \$476,300 for 30-years of O&M for a total of \$1,949,800.

### **Modifying Criteria**

With regard to State acceptance, MassDEP will consider all comments from the community and other stakeholders on the proposed action before concurrence in the Decision Document.

With regard to Community acceptance, comments from the community on the preferred Explosive Risks Alternative for AOI-02 will be evaluated after the comment period for this Proposed Plan ends. Community comments will be addressed in the Decision Document. The selected remedial alternative may be changed or modified based on state or community comments.

### **Comparative Analysis of Remedial Alternatives**

The most important evaluation is against the threshold criteria, as these must be met. With the exception of No Action Alternative 1, all of the alternatives achieved acceptable site conditions and were considered protective of human health and the environment.

All three alternatives were compliant with ARARs.

With regard to the balancing criteria, only Alternative 3 was favorable regarding long term effectiveness due to physically removing and destroying MEC. Alternative 2 was moderately effective in the long term, because while educational awareness would mitigate interactions between MEC and human receptors, any MEC items would remain in place. Only Alternative 3 was favorable for the reduction of the volume of MEC because it is the only alternative to physically remove MEC.

With regard to the short-term effectiveness criterion, Alternative 2 was considered favorable because the community, workers, and the environment can easily be protected during implementation. Alternative 3 was moderately favorable for this criterion

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because there is an increased hazard to workers and the public during MEC removal, and the estimated time to meet the remedial objectives could increase based on the number of MEC items found.

Alternative 1 is favorable for implementability, but only in that there are no activities proposed. Alternative 2 was also favorable for implementability, while Alternative 3 was ranked as moderately favorable due to the temporary disruption to park activities that would result.

Alternative 3 had the highest costs based on the need for full mag & dig or AGC teams and specially trained UXO Technicians to safely conduct the MEC removal and destruction. Alternative 2 had the next highest costs based on periodic site inspections and signage installation, while Alternative 1 had no associated costs.

Alternatives 2 and 3 were both assessed as being protective of human health and the environment, and compliant with ARARs. However, while Alternative 3 had one more moderately favorable ranking, it was significantly more costly than Alternative 2.

## **8.2 AOI-05 - Analysis of Remedial Alternatives**

Table 8.2 summarizes the analysis described below for AOI-05.

### ***Threshold Criteria***

Under Alternative 1, no remedial action would be taken, and potential explosive risks are not mitigated. Therefore, Alternative 1 does not result in acceptable conditions and it is not protective of human health and the environment. For Alternative 2 (LUCs), the post-remedy RMM indicates that educational awareness designed to help modify human behavior at the site would educate visitors about the likelihood of encountering and imparting energy to a potential MEC item, and how to respond if such items are

encountered,, and therefore acceptable conditions are achieved. This is based on the expectation of limited or rare occurrences of pedestrians ignoring signage to interact with potential MEC items. Therefore, Alternative 2 is protective of human health and the environment, using LUCs to limit access to the AOI-05 areas. For Alternative 3 (Partial MEC Removal with LUCs), the post-remedy RMM indicates that MEC removal to 3 feet bgs in the areas shown in Figure B-4, reduces the likelihood of encountering and imparting energy to a potential MEC item by physically removing MEC. Consequently acceptable conditions are achieved based on the mitigated ability of pedestrians to encounter potential MEC items. Therefore, Alternative 3 is protective of human health and the environment based on MEC removal and LUCs to educate the public.

For Alternative 1, since no action will be taken, no ARARs will be triggered. For Alternative 2, ARARs are related to the protection of wildlife species, but the minor disruptive activity (signage installation) of this alternative would be implemented to comply with these ARARs through coordination with NPS, USFWS, and MassDEP to minimize any disturbance and not cause a take of these species. Because no MEC removals will be implemented under Alternative 2, ARARs related to soil removal, water quality, or air quality are not triggered. Therefore, Alternative 2 complies with ARARs. Prior to MEC removal under Alternative 3, the NPS, USFWS, and MassDEP would be consulted to ensure that these actions would not cause a take of these species. ARARs relating to removal and transportation of MEC items will be complied with. Further, it is anticipated that any soil removal or placement surrounding MEC would have negligible impact, so ARARs related to soil removal, water quality, or air quality are not triggered.

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Therefore, Alternative 3 complies with all ARARs.

**Balancing Criteria**

Alternative 1 is not favorable for long-term effectiveness criterion because potential explosive risks are not mitigated. It is not favorable in reducing MEC at the site, or in meeting the short-term effectiveness criterion because MEC removal objectives will not be met. Alternative 1 is favorable in meeting the implementability criterion in that there are no activities proposed.

Alternative 2 is moderately favorable in providing long-term effectiveness by informing the public of the explosive risks within the area, minimizing human exposure. However it would leave any MEC items in place, and while the access of receptors to explosive risks is reduced, it is not eliminated. Alternative 3 is favorable for long-term effectiveness because it removes and destroys all MEC to 3 feet bgs within the partial removal area.

Alternative 2 is not favorable in reducing the volume of MEC at the site because it would leave any MEC items in place. Alternative 3 will result in the reduction of the volume of MEC for the partial removal footprint of AOI-05. Any MEC that is identified would be properly treated and disposed.

Alternative 2 is favorable in meeting the short-term effectiveness criterion because no significant work would be performed beyond the installation of signs, and the community, workers, and the environment can be protected during implementation. The estimated time to meet the remedial objectives would be short. Alternative 3 is moderately favorable for short-term effectiveness because although the community, workers, and the environment can be protected during implementation, there is an increased short-term hazard to workers and the public because MEC will be removed. While MEC removal and

destruction would cause some disruption to park activities, the estimated time to meet the remedial objectives would be relatively short, unless a significant number of MEC items are discovered.

Alternative 2 is favorable in meeting the implementability criterion as it is technically feasible to install signage, produce educational materials, and provide notifications of intrusive work, and the materials and services to implement this alternative are readily available. Alternative 3 is moderately favorable for implementability, because while the materials and services are available and it is feasible to conduct MEC removals, the administrative feasibility may be challenging if NPS does not permit the temporary disruption to park activities and the subsequent impacts to park operations, workers, and visitors that may result.

Alternative 1 has no associated costs. The cost to implement Alternative 2 is relatively low, approximately \$146,600 in capital costs plus \$476,300 for 30-years of O&M for a total of \$622,900. The cost to implement Alternative 3 is moderate to high based on working in areas of moderate to high pedestrian traffic. The total estimated cost for Alternative 3 is approximately \$1,296,300 in capital costs plus \$476,300 for 30-years of O&M for a total of \$1,772,600.

**Modifying Criteria**

With regard to State acceptance, MassDEP will consider all comments from the community and other stakeholders on the proposed action before concurrence in the Decision Document.

With regard to Community acceptance, comments from the community on the preferred Explosive Risks Alternative for AOI-05 will be evaluated after the comment period for this Proposed Plan ends. Community comments will be addressed in the Decision Document.

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### **Comparative Analysis of Remedial Alternatives**

The most important evaluation is against the threshold criteria, as these must be met. With the exception of No Action Alternative 1, all of the alternatives achieved acceptable site conditions and were considered protective of human health and the environment.

All three alternatives were compliant with ARARs.

With regard to the balancing criteria, only Alternative 3 was favorable regarding long term effectiveness due to physically removing and destroying MEC. Alternative 2 was moderately effective in the long term, because while educational awareness would mitigate interactions between MEC and human receptors, any MEC items would remain in place. Only Alternative 3 was favorable for the reduction of the volume of MEC because it is the only alternative to physically remove MEC.

With regard to the short-term effectiveness criterion, Alternative 2 was considered favorable because the community, workers, and the environment can easily be protected during implementation. Alternative 3 was moderately favorable for this criterion because there is an increased hazard to workers and the public during MEC removal, and the estimated time to meet the remedial objectives could increase based on the number of MEC items found.

Alternative 1 is favorable for implementability, but only in that there are no activities proposed. Alternative 2 was also favorable for implementability, while Alternative 3 was ranked as moderately favorable due to the temporary disruption to park activities that would result.

Alternative 3 had the highest costs based on the need for full mag & dig or AGC teams and specially trained UXO Technicians to

safely conduct the MEC removal and destruction. Alternative 2 had the next highest costs based on periodic site inspections and signage installation, while Alternative 1 had no associated costs.

Alternatives 2 and 3 were both assessed as being protective of human health and the environment, and compliant with ARARs. However, while Alternative 3 had one more moderately favorable ranking, it was significantly more costly than Alternative 2.

### **8.3 AOI-06 - Analysis of Remedial Alternatives**

Table 8.3 summarizes the analysis described below for AOI-06.

#### **Threshold Criteria**

Under Alternative 1, potential explosive risks are not mitigated. Therefore, Alternative 1 is not protective of human health and the environment. For Alternative 2, the post-remedy RMM indicates that educational awareness to modify human behavior would educate visitors about the likelihood of encountering and imparting energy to a potential MEC item, and how to respond if such items are encountered,. Consequently acceptable conditions are achieved based on the expectation of limited or rare occurrences of park visitors ignoring signage to interact with potential MEC items. Therefore, Alternative 2 is protective of human health and the environment, using LUCs to educate the public, thereby limiting interactions with potential munitions items in the ocean AOI. For Alternative 3, the post-remedy RMM indicates that MEC removal in the areas shown in Figure B-5, reduces the likelihood of encountering and imparting energy to a MEC item by removing it. Consequently acceptable conditions are achieved based on the mitigated ability of pedestrians to encounter potential MEC items in the removal area. Therefore, Alternative 3 is protective of human health and the

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environment based on MEC removal and LUCs to educate the public.

For Alternative 1, no action will be taken and no ARARs will be triggered. For Alternative 2, ARARs are related to the protection of wildlife species within the waters of AOI-06, but the minor disruptive activity of signage installation (on land) would be implemented to comply with these ARARs through coordination with NPS, USFWS, and MassDEP to minimize any disturbance and not cause a take of these species. Because no MEC removals will be implemented under Alternative 2, ARARs related to soil removal, water quality, or air quality are not triggered. Therefore, Alternative 2 complies with ARARs.

Under Alternative 3, while a partial MEC removal in the ocean would be challenging, all ARARs can be complied with, in coordination with the appropriate authorities, including the Massachusetts NHESP, the USFWS, the NOAA National Marine Fisheries Service, and others. Review of the requirements to conduct removal activities would ensure that they do not jeopardize any federally-listed and/or state-listed species or sensitive habitats. ARARs relating to removal and transportation of MEC items will be complied with. Further, it is not anticipated that removal of MEC from the sea floor will trigger ARARs related to soil removal, water quality, or air quality, and therefore, Alternative 3 complies with all ARARs.

### **Balancing Criteria**

Alternative 1 is not favorable for long-term effectiveness because it would leave any MEC items in place and explosive risks are not mitigated. Alternative 2 is moderately favorable in providing long-term effectiveness by informing the public of the explosive risks within the area, minimizing human exposure. But it would leave any MEC items in place and access of receptors

to explosive risks is not eliminated. Alternative 3 is only moderately favorable for long-term effectiveness in addressing the explosive risks because it removes and destroys all MEC to 2 feet bgs to the 120 foot depth line. However, within these dynamic surf zone areas, after MEC removals were completed, MEC would still have the potential to wash up onshore or be exposed on the shallow sea floor following storm events.

Alternative 1 and Alternative 2 are not favorable in reducing the volume of MEC at the site because both would leave any MEC items in place. Alternative 3 will result in the reduction of the volume of MEC for the partial removal footprint. However, there remains the potential for significant storm events to expose additional MEC items, and therefore, Alternative 3 is moderately favorable for this criterion.

Alternative 1 is not favorable for short-term effectiveness because the RAOs will not be met. Alternative 2 is favorable for short-term effectiveness because there is no significant work beyond sign installation, and the community, workers, and the environment can easily be protected during implementation. The estimated time to meet the remedial objectives would be short. Alternative 3 is moderately favorable for short-term effectiveness because there is an increased short-term hazard to workers and the public because MEC will be removed. While this work has been performed safely and effectively on other sites, there are considerable safety risks to the UXO teams at the ocean depths required under this alternative, and the time required to meet the RAOs would be significant for this acreage.

Alternative 1 is favorable for implementability, but only in that there are no activities proposed. Alternative 2 is favorable in meeting the implementability criterion as it is technically feasible to install

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signage and produce educational materials, and the materials and services to implement this alternative are readily available. Alternative 3 is moderately favorable for implementability. Coordinating and delivering materials and services in a timely manner will be challenging, but can be accomplished, and therefore administrative feasibility is moderately favorable. However, technical feasibility is not favorable for this alternative due to the significant technical operational difficulties of completing a removal action in the open ocean to depths of 120 feet, and the reliability of the alternative to complete the work without significant schedule delays is low.

Alternative 1 has no associated costs. The cost to implement Alternative 2 is relatively low, approximately \$131,700 in capital costs plus \$476,300 for 30-years of O&M for a total of \$608,000. The cost to implement Alternative 3 is significantly high based on working in water depths to 120 feet and covering 15,693 acres, with an estimated cost of approximately \$155,049,600 in capital costs plus \$476,300 for 30-years of O&M for a total of \$155,525,900.

### **Modifying Criteria**

With regard to State acceptance, MassDEP will consider all comments from the community and other stakeholders on the proposed action before concurrence in the Decision Document.

With regard to Community acceptance, comments from the community on the preferred Explosive Risks Alternative for AOI-06 will be evaluated after the comment period for this Proposed Plan ends. Community comments will be addressed in the Decision Document.

### **Comparative Analysis of Remedial Alternatives**

The most important evaluation is against the threshold criteria, as these must be met. With

the exception of No Action Alternative 1, all of the alternatives achieved acceptable site conditions and were considered protective of human health and the environment.

All three alternatives were compliant with ARARs.

With regard to the balancing criteria, Alternative 2 was moderately effective in the long term, because while signage would mitigate interactions between MEC and human receptors through behavior modification, any MEC items would remain in place. Alternative 3 was only moderately effective in the long term because while it removed MEC from the partial removal footprint area, after MEC removals were completed, MEC would still have the potential to wash up onshore or be exposed on the shallow sea floor following storm events. Alternative 1 was not favorable for this criterion.

Alternative 1 and Alternative 2 were not favorable for reduction of the volume of MEC. Alternative 3 was ranked as moderately favorable for this criterion because while it is the only alternative to physically remove MEC, there remains the potential for significant storm events to expose additional MEC items.

Alternative 1 was considered not favorable for short-term effectiveness. Alternative 2 was considered favorable because only sign installation would be performed and the community, workers, and the environment can easily be protected during implementation. Alternative 3 was moderately favorable for short-term effectiveness because there are considerable safety risks to the UXO teams at the ocean depths required, and the time required to meet the RAOs would be significant for this acreage.

Alternative 1 was ranked favorable in meeting the implementability criterion, but

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only in that there are no activities proposed. Alternative 2 was favorable for implementability. Alternative 3 is moderately favorable for implementability. Coordinating and delivering materials and services in a timely manner would be challenging and therefore administrative feasibility is moderately favorable. However, technical feasibility is not favorable due to the significant technical operational difficulties of completing a removal action in the open ocean to depths of 120 feet, and the reliability of the alternative to complete the work without significant schedule delays is low

Alternative 3 had the highest costs based on the need for multiple DGM teams, multiple water craft, and specially trained UXO dive teams to safely conduct the MEC removal and destruction. Alternative 2 had the next highest costs based on periodic site inspections and signage installation, while Alternative 1 had no associated costs.

Alternatives 2 and 3 were both assessed as being protective of human health and the environment, and compliant with ARARs. However, Alternative 2 had more favorable rankings, and while the Alternative 2 cost is relatively low, the Alternative 3 cost is significant.

**Table 8.1: Summary of Detailed Analysis of Explosive Risks Remedial Alternatives – AOI-02**

	Screening Criterion	Alternative 1: No Action	Alternative 2: Land Use Controls	Alternative 3: Partial MEC Removal 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	●	●	◐
	Cost <sup>3</sup>	<b>\$0.00</b>	<b>\$629,800</b>	<b>\$1,949,800</b>
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).

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

\3 - Costs were developed using Remedial Action Cost Engineering and Requirements (RACER) software. O&M for a 30-year duration is included, as applicable, for an alternative. Details provided in Appendix C of the FS.

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

**Table 8.2: Summary of Detailed Analysis of Explosive Risks Remedial Alternatives – AOI-05**

	Screening Criterion	Alternative 1: No Action	Alternative 2: Land Use Controls	Alternative 3: Partial MEC Removal 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	●	●	◐
	Cost <sup>3</sup>	<b>\$0.00</b>	<b>\$622,900</b>	<b>\$1,772,600</b>
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)

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

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

<sup>3</sup> - Costs were developed using RACER software. O&M for a 30-year duration is included, as applicable, for an alternative. Details provided in Appendix C of the FS.

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

**Table 8.3: Summary of Detailed Analysis of Explosive Risks Remedial Alternatives – AOI-06**

	Screening Criterion	Alternative 1: No Action	Alternative 2: Land Use Controls	Alternative 3: Partial MEC Removal 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	●	●	◐
	Cost <sup>3</sup>	<b>\$0.00</b>	<b>\$608,000</b>	<b>\$155,525,900</b>
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).

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

\3 - Costs were developed using RACER software. O&M for a 30-year duration is included, as applicable, for an alternative. Details provided in Appendix C of the FS.

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

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## **9.0 PREFERRED ALTERNATIVE**

### **9.1 AOI-02 - Preferred Remedial Alternative**

**Alternative 2: Land Use Controls, is the recommended preferred remedial alternative to achieve the explosive risks RAOs for AOI-02.**

**Alternative 2: Land Use Controls**, is protective of human health and the environment, using LUCs to limit access to the AOI-02 areas. It will comply with all ARARs through coordination with NPS, USFWS, MassDEP, and the Town of Wellfleet to minimize any disturbance and not cause a take of these protected species. Alternative 2 is moderately favorable for long-term effectiveness by informing the public of the explosive risks, minimizing human exposure, and is favorable in the short-term because the estimated time to meet the remedial action objectives would be short. Alternative 2 is favorable in meeting the implementability criterion as it is technically feasible to install signage, produce educational materials, and provide notifications of intrusive work, and the materials and services to implement this alternative are readily available. While Alternative 3 had one more moderately favorable ranking, it was significantly more costly than Alternative 2.

### **9.2 AOI-05 - Preferred Remedial Alternative**

**Alternative 2: Land Use Controls, is the recommended preferred remedial alternative to achieve the explosive risks RAOs for AOI-05.**

**Alternative 2: Land Use Controls**, is protective of human health and the environment, using LUCs to limit access to the AOI-05 areas. It will comply with all ARARs through coordination with NPS and

USFWS. It is moderately favorable for long-term effectiveness by informing the public of the explosive risks, and the estimated time to meet the remedial action objectives would be short. Alternative 2 is favorable in meeting the implementability criterion as it is technically feasible to install signage, produce educational materials, and provide notifications of intrusive work, and the materials and services to implement this alternative are readily available. While Alternative 3 had one more moderately favorable ranking, it was significantly more costly than Alternative 2.

### **9.3 AOI-06 - Preferred Remedial Alternative**

**Alternative 2: Land Use Controls, is the recommended preferred remedial alternative to achieve the explosive risks RAOs for AOI-06.**

**Alternative 2, Land Use Controls**, was ranked favorable for more criteria than were the other alternatives. It is protective of human health and the environment, is compliant with ARARs, is effective in the short term, and is favorable for implementability. Alternative 3 was favorable for only two criteria. The Alternative 2 cost is relatively low while the Alternative 3 cost is significant.

Based on information currently available, USACE believes the Preferred Alternative meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the balancing and modifying criteria. USACE expects the Preferred Alternative to satisfy the following statutory requirements of CERCLA §121(b): (1) be protective of human health and the environment; (2) comply with ARARs; (3) be cost-effective; (4) utilize permanent solutions and alternative treatment technologies to the maximum extent practicable; and (5) satisfy

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the preference for treatment as a principal element.

#### **9.4 AOI-01, AOI-03, and AOI-04 - Preferred Remedial Alternative**

As discussed in Section 5.3, AOI-01, AOI-03, and AOI-04 were categorized as presenting acceptable site conditions with regard to explosive risks. Accordingly, No Action is the preferred alternative for those AOIs.

### **10.0 COMMUNITY PARTICIPATION**

The Administrative Record for the site and a local Information Repository at the Town of Wellfleet Public Library provide easy access to historical and current documents on the project progress. The USACE New England District also posts site information and reports on its website:

<https://www.nae.usace.army.mil/Missions/Projects-Topics/Camp-Wellfleet-FUDS/>

Through these outreach mechanisms USACE encourages public input to ensure that the remedy selected for the Camp Wellfleet FUDS meets the needs of the impacted community, in addition to being an effective technical solution to the problems.

USACE specifically invites comments from the community and other interested parties, not only on the preferred alternatives but also on the acceptability of all the alternatives identified in the FS Report.

Public comments that support an alternative other than the USACE preferred alternative, or that suggest improvements to the USACE preferred alternative, will be given appropriate consideration in the final selection process; the USACE preferred alternative may be modified based on any

new information acquired during the public comment period. Assuming MassDEP concurrence, USACE will work in coordination with MassDEP, and the final selection of remedial action for the Camp Wellfleet FUDS will be included in a Decision Document after evaluating comments received from the public on this Proposed Plan.

**The dates for the public comment period, the location, date, and time of the public meeting, and the variety of ways to access copies of the Proposed Plan and supporting documents are provided in Exhibit 1 and below.**

**Note that due to Covid-19 protocols, this will be organized as a virtual meeting:**

<https://usace1.webex.com/join/cenae-pa>

Meeting Number: 1999 45 8471

Join by phone 1-844-800-2712 US Toll Free or 1-669-234-1177 US Toll, Access code: 199 945 8471.

At the public meeting, the conclusions of the RI and FS Reports will be discussed along with a summary of the preferred alternative. Attendees may submit written or oral comments. Written comments may also be mailed to the USACE address in Exhibit 1 throughout the public comment period. Comments will be summarized and responses provided in the responsiveness summary section of the Decision Document.

The Decision Document will be USACE's official record of the final remedy selection for the Camp Wellfleet FUDS and will also include the Responsiveness Summary. The Decision Document will be submitted for approval by the Department of the Army.

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## 11.0 REFERENCES

- DoD, 2012. *Defense Environmental Restoration Program (DERP) Management*, NUMBER 4715.20. March.
- USACE, 1994. *Archive Search Report Conclusions and Recommendations for the Former Camp Wellfleet, Wellfleet Massachusetts*. 19 December.
- USACE, 2000. *Final Former Camp Wellfleet Engineering Evaluation and Cost Analysis (EE/CA)*. May.
- USACE, 2013. *First Five-Year Review Report for Former Camp Wellfleet*. May.
- USACE, 2014. *USACE FUDS Handbook on Delineation and Munitions Response Site Prioritization Protocol Implementation*. March.
- USACE, 2017. *Decision Logic to Assess Risks Associated with Explosive risks and to Develop Remedial Action Objectives for Munitions Response Sites*. December.
- USACE, 2019. *Final Remedial Investigation Report, Former Camp Wellfleet Formerly Used Defense Site, Wellfleet, Massachusetts*. April.
- USACE, 2021. *Final Feasibility Study, Former Camp Wellfleet Formerly Used Defense Site, Wellfleet, Massachusetts*. June.
- Zapata, 2006. *Site Specific Final Investigation Report – Addendum, Ordnance and Explosive Removal Action, Former Camp Wellfleet, Volumes I and II*. April.

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**APPENDIX A – ACRONYMS/GLOSSARY OF TERMS**

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## ACRONYMS

AGC	Advanced Geophysical Classification
AOI	Area of Interest
ARARs	Applicable or Relevant and Appropriate Requirements
Bgs	below ground surface
CCNS	Cape Cod National Seashore
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CSM	Conceptual Site Model
DD	Decision Document
DERP	Defense Environmental Restoration Program
DGM	Digital Geophysical Mapping
DMM	Discarded Military Munitions
DoD	Department of Defense
FS	Feasibility Study
FUDS	Formerly Used Defense Site
HHRA	Human Health Risk Assessment
LUCs	Land Use Controls
MassDEP	Massachusetts Department of Environmental Protection
MC	Munitions Constituents
MD	Munitions Debris
MEC	Munitions and Explosives of Concern
MMRP	Military Munitions Response Program
MRS	Munitions Response Site
MRSPP	Munitions Response Site Prioritization Protocol
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NHESP	Natural Heritage & Endangered Species Program
NPS	National Park Service
O&M	Operation and Maintenance
ORNL	Oak Ridge National Laboratory
PDT	Project Delivery Team
RACER	Remedial Action Cost Engineering Requirements
RAO	Remedial Action Objective
RI	Remedial Investigation
RMM	Risk Management Methodology
SLERA	Screening Level Ecological Risk Assessment
TBD	To Be Determined
TEC	Topographic Engineering Center
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UU/UE	Unlimited Use/Unrestricted Exposure
UXO	Unexploded Ordnance

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## GLOSSARY OF TERMS

**Administrative Record** - A collection of documents containing all the information and reports generated during the entire phase of investigation and cleanup at a site, which are used to make a decision on the selection of a response action under CERCLA. This file is to be available for public review and a copy maintained near the site at the Tenley-Friendship Library.

**Applicable or Relevant and Appropriate Requirements (ARARs)** - Applicable requirements are cleanup standards, standards of control, and other substantive environmental protection requirements promulgated under Federal or state environmental law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location or other circumstance found at a CERCLA site. Relevant and appropriate requirements are cleanup standards that, while not “applicable”, address situations sufficiently similar to those encountered at a CERCLA site that their use is well suited to the particular site. Pursuant to the NCP, the term “State” includes the District of Columbia (DC). 40 C.F.R. § 300.5.

**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.

**Decision Document (DD)** - The Department of Defense has adopted the term Decision Document for the documentation of remedial action decisions at non-National Priorities List FUDS Properties. It is a public document that describes the cleanup action or remedy selected for a site, the basis for the choice of that remedy, and responds to public comments.

**Discarded Military Munitions (DMM)** - Military munitions that have been abandoned without proper disposal or removed from storage in a military magazine or other storage area for the purpose of disposal. The term does not include unexploded ordnance, military munitions that are being held for future use or planned disposal, or military munitions that have been properly disposed of, consistent with applicable environmental laws and regulations. (10 U.S.C. 2710(e)(2))

**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 RI.

**Formerly Used Defense Site (FUDS)** - A Formerly Used Defense Site Project is a unique name given to 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. This may include buildings, structures, impoundments, landfills, storage containers, or other areas where hazardous substance are or have come to be located, including FUDS eligible unsafe buildings or debris. Projects are categorized by actions described under installation restoration (hazardous, toxic, and radioactive waste [HTRW]), military munitions response program, or building demolition/debris removal.

**Land Use Controls (LUCs)** - Physical, legal, or administrative mechanisms that restrict the use of, or limit access to, real property to prevent or reduce risks to human health and the environment.

**Munitions Constituents (MC)** - Any materials originating from UXO, DMM, or other military munitions, including explosive and nonexplosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions. (10 U.S.C. 2710(e)(3))

**Munitions Debris (MD)** - Remnants of munitions (e.g., fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization or disposal.

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**Munitions and Explosives of Concern (MEC)** - This term 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 an MRA that is known to require a munitions response (DoD, 2012).

**National Oil and Hazardous Substance Pollution Contingency Plan (NCP)** - Revised in 1990, the NCP provides the regulatory framework for responses under CERCLA. The NCP designates the Department of Defense as the removal response authority for ordnance and explosives hazards.

**Proposed Plan** - The purpose of the proposed plan is to supplement the RI/FS and provide the public with a reasonable opportunity to comment on the preferred alternative for remedial action, as well as alternative plans under consideration, and to participate in the selection of remedial action at a site. The proposed plan is a document used to facilitate public involvement in the remedy selection process and presents the lead agency's preliminary recommendation concerning how best to address site hazards, alternatives evaluated, and reasons the lead agency recommends the Preferred Alternative.

**Remedial Action** - Those actions consistent with permanent remedy taken instead of, or in addition to, removal actions, in the event of a release or threatened release of a hazardous substance into the environment, to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future human health, welfare or the environment.

**Remedial Action Objective (RAO)** - Objectives established for remedial actions to guide the development of alternatives and focus the comparison of acceptable remedial action alternatives, if warranted. RAOs also assist in clarifying the goal of minimizing risk and achieving an acceptable level of protection for human health and the environment.

**Remedial Investigation (RI)** - A study of a site that provides information supporting the evaluation for the need for a remedy and/or selection of a remedy for a site where hazardous substances have been disposed of. The RI identifies nature and extent of contamination at the site.

**Removal Action** - The cleanup or removal of released hazardous substances from the environment. Such actions may be taken in the event of the threat of release of hazardous substances into the environment, such actions as may be necessary to monitor, assess, and evaluate the release or threat of release of hazardous substances, the disposal of removed material, or the taking of such other actions as may be necessary to prevent, minimize, or mitigate damage to the human health or welfare or to the environment, which may otherwise result from a release or threat of release.

**Unexploded Ordnance (UXO)** - Military munitions that (A) have been primed, fuzed, armed, or otherwise prepared for action; (B) have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material; and (C) remain unexploded whether by malfunction, design, or any other cause. (10 U.S.C. 101(e)(5)(A) through (C)).

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## **APPENDIX B – LIST OF FIGURES**

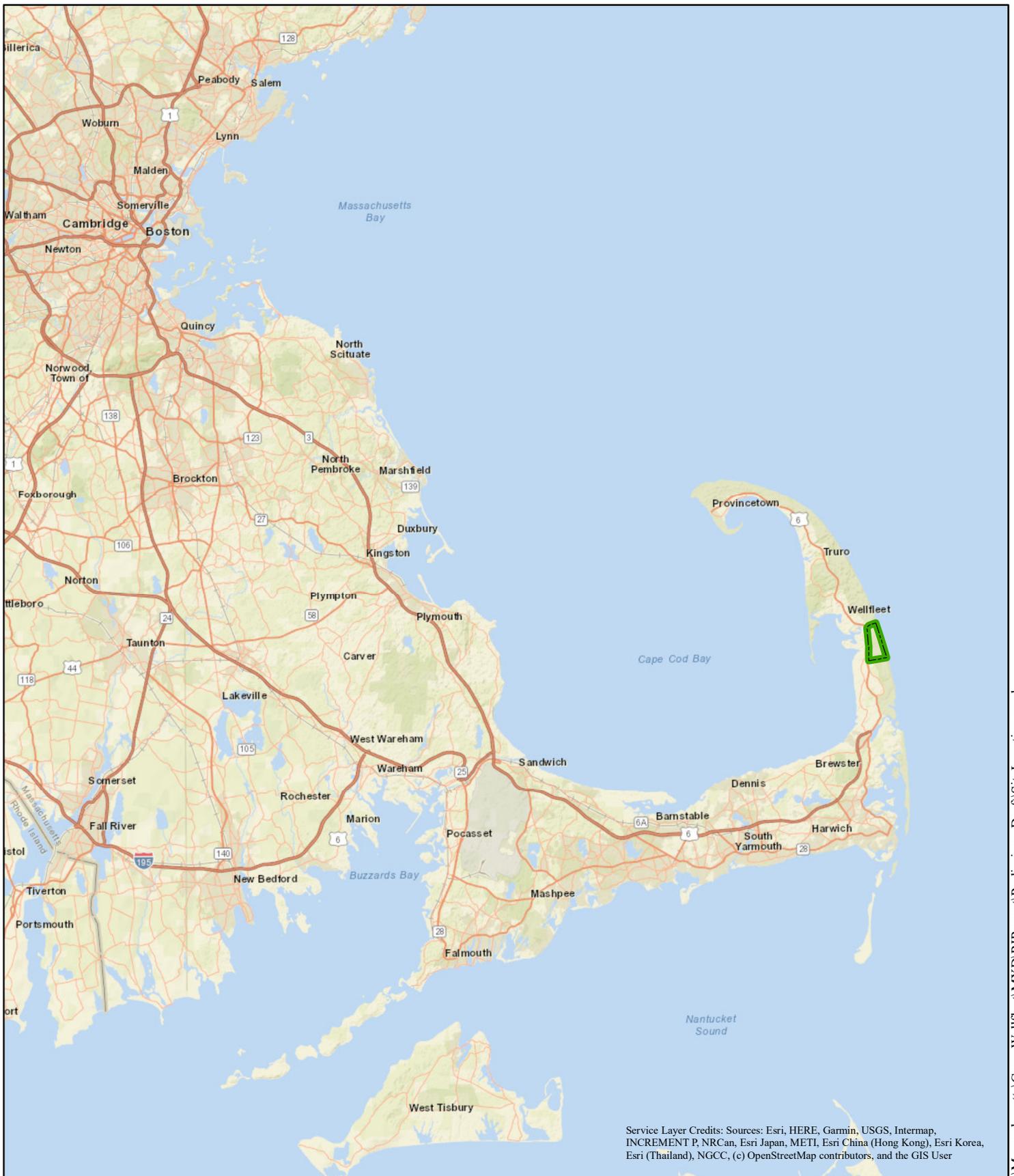
Figure B-1: Site Location

Figure B-2: Site layout

Figure B-3: AOI-02

Figure B-4: AOI-05

Figure B-5: AOI-06

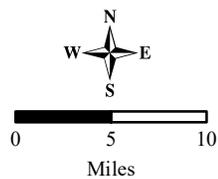


Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User



**Legend**

-  Former Camp
-  Wellfleet Boundary



**Figure B-1**  
**Site Location**  
 Former Camp Wellfleet  
 Wellfleet, Barnstable County,  
 Massachusetts



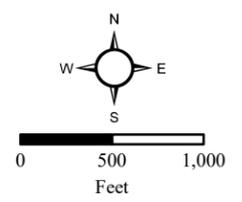
**Legend**

Areas of Interest (AOIs)

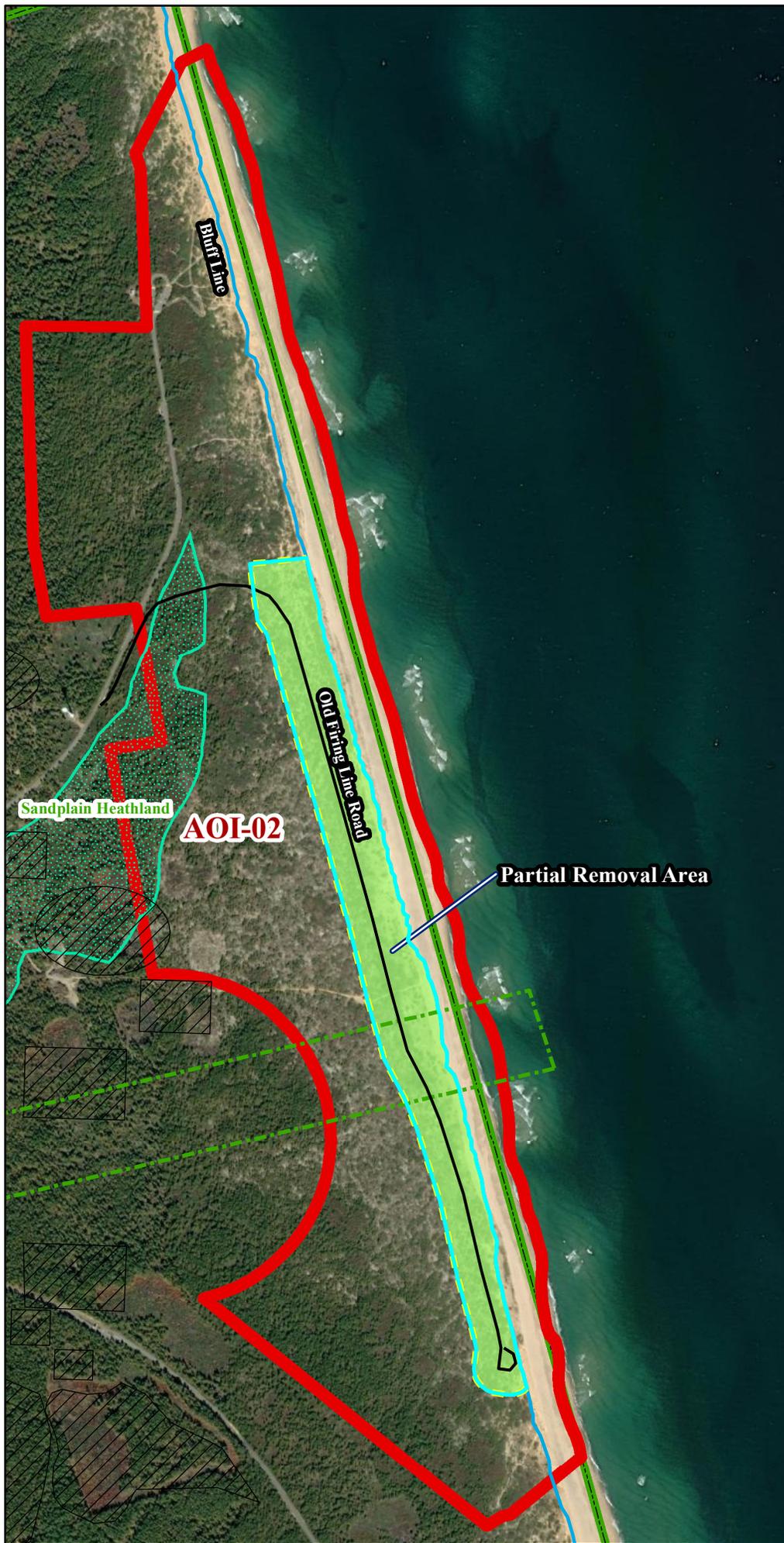
- AOI-01
- AOI-02\*
- AOI-03
- AOI-04
- AOI-05\*
- AOI-06 (Inset)
  
- EE/CA Grids  
(100% of Anomalies Excavated, 2000)
- EE/CA Grid  
(Partial Excavation of Anomalies, 2000)
- Single Point Anomaly  
(100% Excavated, 2003 - 2004)
- Removal Area  
(100% of Anomalies Excavated, 2004 and 2005)
- EE/CA Areas
- U.S. Highway
- Roads
- Town of Wellfleet Parcel
- Former Camp Wellfleet Boundary
- Wellfleet (Town) Boundary

\* The eastern boundary of AOI-02 and AOI-05 is the current shoreline downloaded from NOAA's Continuously Updated Shoreline Program, which attempts to provide updated imagery representing mean low tide.

Aerial Image and Inset Map Background: ESRI Online



**Figure B-2**  
**Site Layout**  
 Former Camp Wellfleet  
 Wellfleet, Barnstable County,  
 Massachusetts

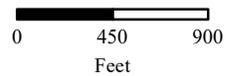
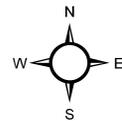


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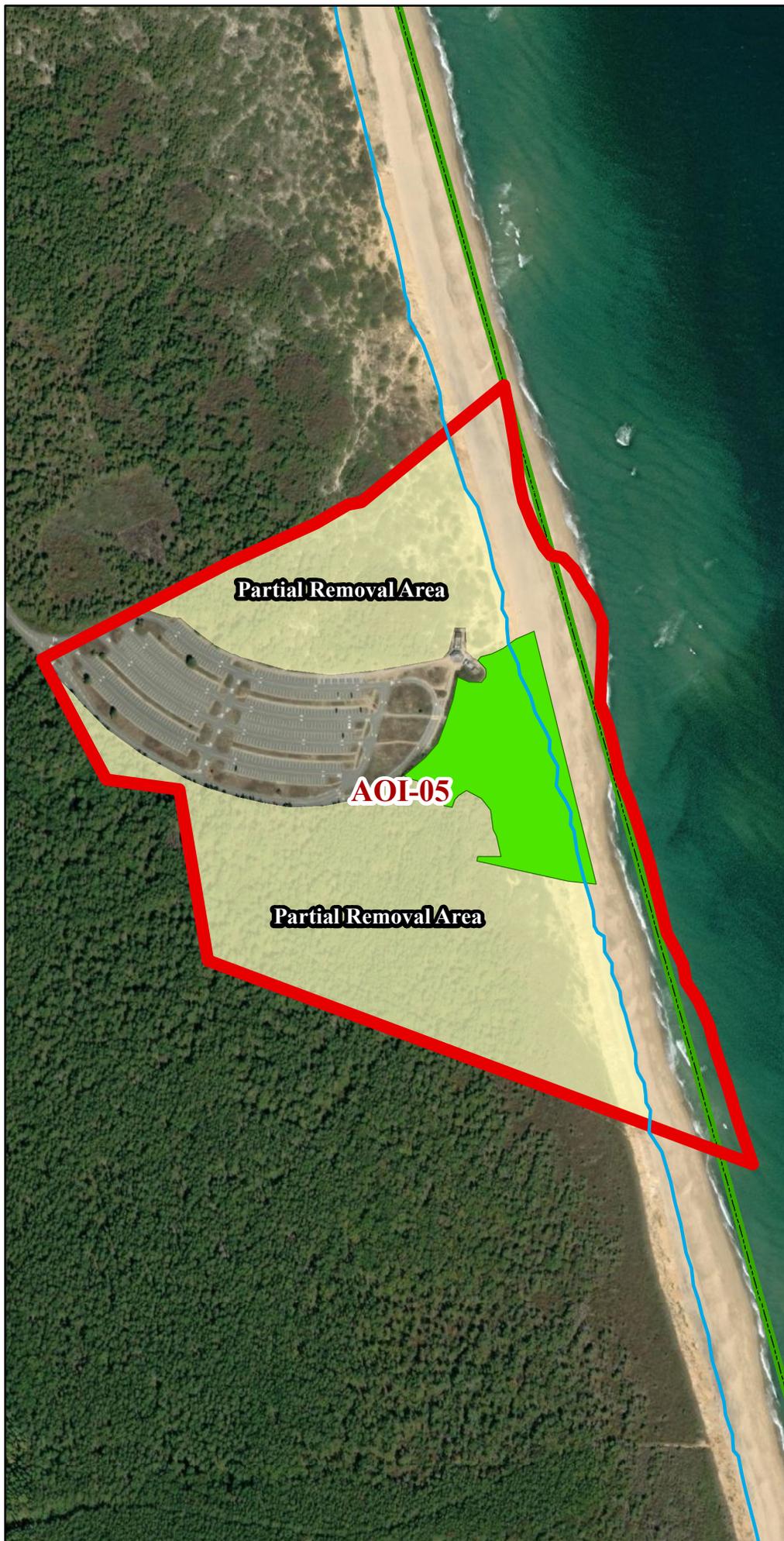
- 150 ft Partial Removal Limit (associated with Alternative 3)
- Partial Removal Area (associated with Alternative 3) (39.2 Acres)
- Historical Firing Line Road
- Approximate Bluff Location (2015)
- NHESP Natural Community Sandplain Heathland
- AOI-02 Boundary
- Areas Ineligible for Work by Request of the Cape Cod National Seashore National Park Service (CCNS NPS) due to Ongoing Research or Habitat Establishment
- Camp Wellfleet Boundary
- Town of Wellfleet Parcel

NHESP - Natural Heritage & Endangered Species Program

Aerial: ESRI Online  
 Natural Communities: NHESP BioMap2 Core Habitat Priority Natural Communities



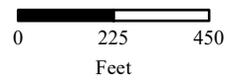
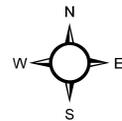
**Figure B-3**  
**AOI-02**  
 Former Camp Wellfleet  
 Wellfleet, Barnstable County,  
 Massachusetts



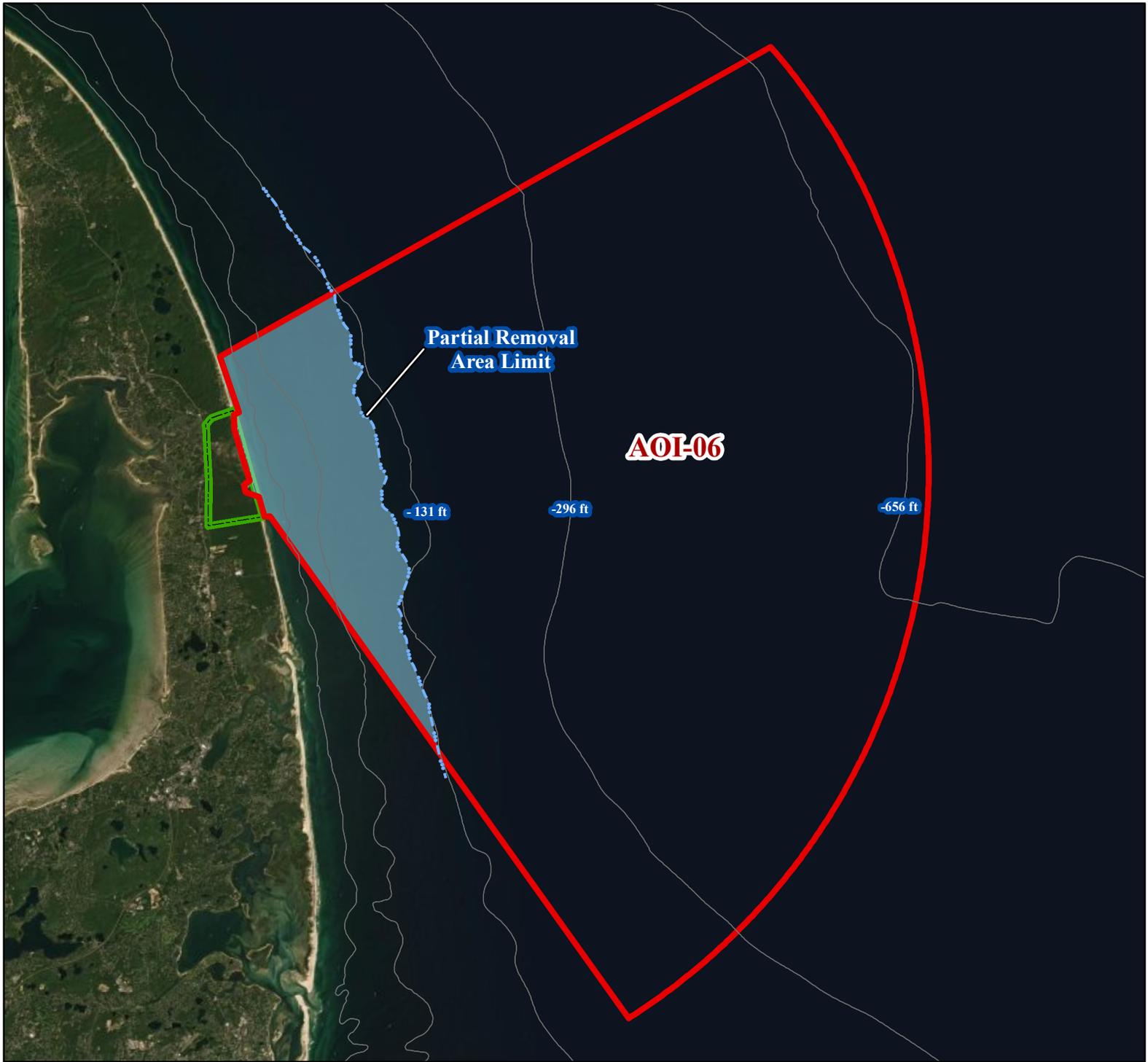
**Legend**

-  Approximate Bluff Location (2015)
-  Partial Removal Area (associated with Alternative 3) (30.1 Acres)
-  AOI-05 Boundary
-  Removal Area (100% of Anomalies Excavated, 2004 and 2005)
-  Camp Wellfleet Boundary

Aerial: ESRI Online



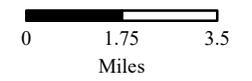
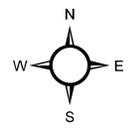
**Figure B-4**  
**AOI-05**  
 Former Camp Wellfleet  
 Wellfleet, Barnstable County,  
 Massachusetts



**Legend**

-  Partial Removal Area Limit (associated with Alternative 3)
-  120 ft Deep Recreational Diver's Limit (15,693 Acres)
-  AOI-06
-  Bathymetric Contours
-  Camp Wellfleet Boundary

Aerial: ESRI Online  
 Bathymetry: EOEa Coastal Zone Management - Mass GIS  
<http://www.state.ma.us/mgis/>  
 120 ft depth line derived from NOAA navigation chart.



**Figure B-5**  
**AOI-06**  
 Former Camp Wellfleet  
 Wellfleet, Barnstable County,  
 Massachusetts