FORA ESCA REMEDIATION PROGRAM

DRAFT FINAL

Group 1

Remedial Investigation / Feasibility Study Work Plan

Volume 1 - Work Plan

Seaside Munitions Response Area and Parker Flats Munitions Response Area Phase II

Former Fort Ord
Monterey County, California

November 13, 2008

Prepared for:

FORT ORD REUSE AUTHORITY

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WESTON SOLUTIONS

Westcliffe Engineers, Inc.

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Former Fort Ord
Monterey County, California

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CONTENTS

TABLES

FIGURES

APPENDICES

ACRONYMS AND ABBREVIATIONS

ACES	Areas Covered by Environmental Services
AOC	Administrative Order on Consent
ARARs	applicable or relevant and appropriate requirements
Army	United States Department of the Army
BADT	best available and appropriate detection technology
bgs	below ground surface
BO	Biological Opinion
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CIOP	Community Involvement and Outreach Program
CRP	Community Relations Plan
CSM	Conceptual Site Model
CSUMB	California State University Monterey Bay
DGM	digital geophysical mapping
DMM	discarded military munitions
DOD	United States Department of Defense
DOJ	Department of Justice
DQOs	Data Quality Objectives
DTSC	Department of Toxic Substances Control
EDC	Economic Development Conveyance
ENRD	Environmental and Natural Resources Division
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
ESCA	Environmental Services Cooperative Agreement
ESCA RP	Environmental Services Cooperative Agreement Remediation Program
FS	Feasibility Study
FFA	Federal Facility Agreement
FORA	Fort Ord Reuse Authority
FOSET	Findings of Suitability of Early Transfer
FWS	United States Fish and Wildlife Service
G1 SAP	Group 1 Sampling and Analysis Plan
GIS	Geographical Information System
HFA	Human Factors Applications, Inc.
HMP	Habitat Management Plan
HTRW	hazardous, toxic, and radioactive waste
LFR	LFR Inc.

MEC	Munitions and Explosives of Concern
MMRP	Military Munitions Response Program
MRA	Munitions Response Area
MRS	Munitions Response Site
msl	mean sea level
NPL	National Priorities List
NTCRA	Non-Time-Critical Removal Action
PA	Programmatic Agreement
PRGs	preliminary remediation goals
PWP	Programmatic Work Plan
QA	quality assurance
QA/QC	quality assurance/quality control
QC	quality control
QAPP	Quality Assurance Project Plan
RAOs	Remedial Action Objectives
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	record of decision
RQA	Residential Quality Assurance
RWQCB	Regional Water Quality Control Board
SAP	Sampling and Analysis Plan
SCAs	Special Case Areas
SEDR	Summary of Existing Data Report
SOP	standard operating procedure
TBC	to-be-considered criteria
TRC	Technical Review Committee
TSRS	Technical Specifications and Requirement Statement
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
UXO	unexploded ordnance
Westcliffe	Westcliffe Engineers, Inc.
WESTON	Weston Solutions, Inc.

GLOSSARY

Anomaly
Any item that is seen as a subsurface irregularity after geophysical investigation. This irregularity should deviate from the expected subsurface ferrous and non-ferrous material at a site (i.e., pipes, power lines, etc.).

Anomaly Avoidance
Techniques employed by unexploded ordnance (UXO) personnel at sites with known or suspected munitions and explosives of concern (MEC) to avoid any potential surface MEC and any subsurface anomalies. This usually occurs at mixed hazard sites when hazardous, toxic, and radioactive waste hazardous, toxic, and radioactive waste (HTRW) investigations must occur prior to execution of an MEC removal action. Intrusive anomaly investigation is not authorized during ordnance avoidance operations.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980
CERCLA authorizes federal action to respond to the release or threatened release of hazardous substances into the environment or a release or threatened release of a pollutant or contaminant into the environment that may present an imminent or substantial danger to public health or welfare.

Construction Support
Support provided by qualified UXO personnel during construction activities at potential MEC sites to reduce the potential for exposure to MEC. When a determination is made that the probability of encountering MEC is low (i.e., current or previous land use leads to an initial determination that MEC may be present), only MEC safety support is required. When a determination is made that the probability of encountering MEC is moderate to high (current or previous land use leads to an initial determination that MEC was employed or disposed of in the area of concern), UXO teams are required to conduct subsurface MEC clearance of the known construction footprint either in conjunction with the construction contractor or prior to construction intrusive activities. The level of effort will be determined on a case-by-case basis.

Covenant Deferral Request
A letter along with a supporting information package known as a Covenant Deferral Request (CDR) is assembled by the Federal landholding to formally request deferral of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) covenant until that all remediation has been accomplished prior to transfer. United States Environmental Protection Agency (EPA) requires that the information is: 1) of sufficient quality and quantity to support the request for deferral of the CERCLA Covenant; and 2) that it provides a basis for EPA to make its determination. This information is submitted to EPA in the form of a CDR.

Deferral period
The period of time that the CERCLA covenant warranting that all remedial action is complete before transfer, is deferred through the Early Transfer Authority.

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 UXO, 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))

Early Transfers
The transfer by deed of federal property by United States Department of Defense (DOD) to a nonfederal entity before all remedial actions on the property have been taken. Section 120 (h)(3)(C) of the CERCLA allows Federal agencies to transfer property before all necessary cleanup actions have been taken. This provision, known as early transfer authority, authorizes the deferral of the CERCLA covenant when the findings required by the statute can be made and the response action assurances required by the statute are given. The Governor of the state where the property is located must concur with the deferral request for property not listed on the National Priorities List (NPL). For NPL property, the deferral must be provided by the EPA with the concurrence of the Governor. Upon approval to defer the covenant, DOD may proceed with the early transfer.

ESCA RP Team
LFR Inc., Weston Solutions, Inc., and Westcliffe Engineers, Inc.

Exclusion Zone
A safety zone established around an MEC work area. Only essential project personnel and authorized, escorted visitors are allowed within the exclusion zone. Examples of exclusion zones are safety zones around MEC intrusive activities and safety zones where MEC is intentionally detonated.

Explosive
Includes items designed to cause damage to personnel or material through explosive force that may be accomplished by bombs, warheads, missiles, projectiles, rockets, antipersonnel and antitank mines, demolition and spotting charges, grenades, torpedoes and depth charges, high explosives and propellants, fuses from practice items, and all similar and related items or components explosive in nature.

Feasibility Study (FS)
The primary objective of the FS is “to ensure appropriate remedial alternatives are being developed and evaluated and an appropriate remedy selected” [NCP 40 CFR 300.430(e)].

Geophysical Reacquisition
Geophysical Reacquisition involves utilizing both a positioning method (i.e., Global Positioning System [GPS], ultrasonic, or tape from corners) and geophysical instruments to reacquire and pinpoint anomaly locations selected by the geophysical processors. The geophysical instruments include the original instrument used for the digital survey of the grid and the analog instrument being utilized by the UXO teams for intrusive activities. The intended result of this method is to pinpoint the location where the intrusive teams will find the subsurface item causing the anomaly.

Intrusive Activity
An activity that involves or results in the penetration of the ground surface at an area known or suspected to contain MEC. Intrusive activities can be of an investigative or removal action nature.

mag and dig
Utilizing hand held geophysical instruments to detect anomalies and immediately investigating the anomalies (without using collection of digital data and post processing to determine which anomalies to dig) by manual digging or with the assistance of heavy equipment

Material Potentially Presenting an Explosive Hazard (MPPEH)
Material potentially containing explosives or munitions (e.g., munitions containers and packaging material; munitions debris remaining after munitions use, demilitarization, or disposal; and range-related debris); or material potentially containing a high enough concentration of explosives such that the material presents an explosive hazard (e.g., equipment, drainage systems, holding tanks, piping, or ventilation ducts that were associated munitions production, demilitarization or disposal operations). Excluded from MPPEH are munitions within DOD's established munitions management system and other hazardous items that may present explosion hazards (e.g., gasoline cans, compressed gas cylinders) that are not munitions and are not intended for use as munitions.

Memorandum of Agreement (MOA)
"Memorandum of Agreement Among the Fort Ord Reuse Authority, Monterey County and Cities of Seaside, Monterey, Del Rey Oaks and Marina, California State University Monterey Bay, University of California Santa Cruz, Monterey Peninsula College, and the Department of Toxic Substances Control Concerning Monitoring and Reporting of Environmental Restrictions on the Former Fort Ord, Monterey County, California"

Military Munitions
All ammunition products and components produced for or used by the armed forces for national defense and security, including ammunition products or components under the control of the DOD, the Coast Guard, the Department of Energy, and the National Guard. The term includes confined gaseous, liquid, and solid propellants, explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries, including bulk explosives, and chemical warfare agents, chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges, and devices and components of the above. The term does not include wholly inert items, improvised explosive devices, and nuclear weapons, nuclear devices, and nuclear components, other than non-nuclear components of nuclear devices that are managed under the nuclear weapons program of the Department of Energy after all required sanitization operations under the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.) have been completed. (10 U.S.C. 101(e)(4)(A through C)).

Military Munitions Response Program
Department of Defense-established program that manages the environmental, health and safety issues presented by munitions of explosives concern.

Minimum Separation Distance (MSD)
MSD is the distance at which personnel in the open must be from an intentional or unintentional detonation.

Munitions and Explosives of Concern (MEC)
This term, which distinguishes specific categories of military munitions that may pose unique explosives safety risks means: (A) UXO, as defined in 10 U.S.C. 101(e)(5)(A) through (C); (B) Discarded military munitions (DMM), as defined in 10 U.S.C. 2710(e)(2); or (C) Munitions constituents (e.g., TNT, RDX), as defined in 10 U.S.C. 2710(e)(3), present in high enough concentrations to pose an explosive hazard.

Munitions Constituents (MC)
Any materials originating from UXO, discarded military munitions, 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).

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

Munitions Response Area (MRA)
Any area on a defense site that is known or suspected to contain UXO, DMM, or MC. Examples include former ranges and munitions burial areas. A munitions response area is comprised of one or more munitions response sites.

Munitions Response Site (MRS)
A discrete location within an MRA that is known to require a munitions response.

Ordnance and Explosives (OE)
See MEC.

Quality Assurance (QA)
An integrated system of management activities involving planning, implementation, assessment, reporting, and quality improvement to ensure that a process, item, or service is of the type and quality needed to meet project requirements.

Quality Control (QC)
The overall system of operational techniques and activities that measures the attributes and performance of a process, item, or service against defined standards that are used to fulfill requirements for quality.

Record of Decision (ROD)
An ROD is the document used to record the remedial action decision made at a National

Priorities List property. The ROD will be maintained in the project Administrative Record and project file.

Remedial Investigation (RI)

The RI is intended to "adequately characterize the site for the purpose of developing and evaluating an effective remedial alternative" (NCP, 40 CFR 300.430(d)). In addition, the RI provides information to assess the risks to human health, safety, and the environment that were identified during risk screening in the site investigation.

Remedial Actions

Those actions consistent with a 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 public health, welfare, or the environment. The term includes but is not limited to such actions at the location of the release as storage; confinement; perimeter protection using dikes, trenches, or ditches; clay cover; neutralization; cleanup of released hazardous substances and associated contaminated materials; recycling or reuse; diversion; destruction; segregation of reactive wastes; dredging or excavations; repair or replacement of leaking containers; collection of leachate and runoff; on-site treatment or incineration; provision of alternative water supplies; and any monitoring reasonably required to assure that such actions protect the public health, welfare, and the environment. The term includes the costs of permanent relocation of residents and businesses and community facilities where the President of the United States determines that, alone or in combination with other measures, such relocation is more cost-effective and environmentally preferable to the transportation, storage, treatment, destruction, or secure disposition off site of hazardous substances, or may otherwise be necessary to protect the public health or welfare. The term includes off-site transport and off-site storage, treatment, destruction, or secure disposition of hazardous substances and associated contaminated materials.

Response Action

Action taken instead of or in addition to a removal action to prevent or minimize the release of MEC so that it does not cause substantial danger to present or future public health or welfare or the environment.

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, installation, personnel, or material; and (C) remain unexploded either by malfunction, design, or any other cause. (10 U.S.C. 101(e)(5)(A) through (C)).

UXO Technicians

Personnel who are qualified for and filling Department of Labor, Service Contract Act, Directory of Occupations, contractor positions of UXO Technician I, UXO Technician II, and UXO Technician III.

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EXECUTIVE SUMMARY

Introduction and Purpose

This Group 1 Remedial Investigation/Feasibility Study (RI/FS) Work Plan ("the Group 1 RI/FS Work Plan") describes the cleanup of munitions and explosives of concern (MEC) on portions of the former Fort Ord in Monterey County, California (Figure 1). Group 1 consists of the Seaside and Parker Flats Munitions Response Areas (MRAs; Figure 2). The objective of this Group 1 RI/FS Work Plan is to outline the steps that will be taken to: 1) gather data to fully characterize the Phase II areas of the Parker Flats MRA ("Parker Flats MRA Phase II"); 2) assess explosives safety risk that may be present at the Group 1 MRAs; and 3) evaluate alternatives under the RI/FS process to reduce the potential explosives safety risk to current and future property owners and the general public within the Group 1 MRAs.

This Group 1 RI/FS Work Plan describes: 1) the proposed methodology to obtain the necessary information to fill data gaps identified for the Parker Flats MRA Phase II; 2) the proposed methodology to assess the quality and quantity of existing and future data that will be used to assess explosives safety risks that may be present at the Group 1 MRAs; and 3) the steps that will be taken to evaluate alternatives under the RI/FS process to reduce the potential explosives safety risk.

The information obtained during the Group 1 RI/FS Work Plan effort will be used to complete the RI/FS and characterize the nature and extent of MEC in order to propose a preferred remediation alternative for the Group 1 MRAs pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The information and evaluation will be presented in a Group 1 RI/FS report. The Group 1 RI/FS Work Plan outlines the specific RI/FS tasks that will be performed to make decisions regarding risk and remedial actions during the RI/FS, as defined by the Administrative Order on Consent (AOC). The AOC tasks presented in the Group 1 RI/FS Work Plan are consistent with those provided in the U.S Environmental Protection Agency's (EPA's) current RI/FS guidance document.

An initial evaluation of the data for the Group 1 MRAs was conducted as part of the Summary of Existing Data Report, and the results identified initial data gaps for portions of the Seaside and Parker Flats MRAs. To address these data gaps, additional field investigation activities were proposed for the Special Case Areas previously identified by the United States Department of the Army within the Seaside MRA (Figure 3) and the Phase II areas of the Parker Flats MRA (Figure 4). Field activities and data collection related to the Seaside MRA removal action are currently being conducted under a site-specific work plan that was reviewed and approved by the regulatory agencies. Field activities, data collection, and data management associated with the Parker Flats MRA Phase II will be conducted in accordance with the plans and standard operating procedures contained in Volume 2 of this Group 1 RI/FS Work Plan. The results of the Seaside MRA removal action and the Parker Flats MRA investigations will be incorporated into the RI/FS report for the Group 1 MRAs.

Work Plan Organization

The Group 1 RI/FS Work Plan has been divided into two volumes. Volume 1 provides a rationale for the work plan approach including data analysis and validation, summarizes the tasks required to complete the Group 1 RI/FS, and presents an outline for the RI/FS report and an anticipated project schedule for Group 1 field activities and document preparation. Volume 2 presents the Group 1 Sampling and Analysis Plan (G1 SAP) and describes the procedures, methods, and resources that will be used to conduct the field activities associated with the MEC remedial investigation within the Parker Flats MRA Phase II. Additionally, Volume 2 includes a description of the process, procedures, and success criteria for the Residential Quality Assurance (RQA) Pilot Study.

Remedial Investigation and Feasibility Study (Volume 1)

Volume 1 presents the tasks to be performed to complete the RI/FS process, including nature and extent of MEC contamination, a baseline risk assessment, and a feasibility study (FS) for the Group 1 MRAs. In order to complete the RI/FS process for the Group 1 MRAs, an assessment of the risk of explosive hazard is required. To properly assess explosives safety risks that may be present at the Group 1 MRAs and to recommend an appropriate remedial alternative, the quality and quantity of existing data for the Group 1 MRA, as well as the quality of data collected in the future, must be evaluated. Following the completion of field activities and data collection within the Seaside and Parker Flats MRAs, the newly collected data and the existing data will be further analyzed to confirm whether the data are of sufficient quality to support an evaluation of alternatives for the FS and whether the removal data are sufficient to be used to support explosives safety risk management decision making.

If the data are determined to be sufficient, the Group 1 MRAs will proceed to the risk assessment phase. The explosives safety risk assessment will be conducted using the specific protocol previously developed to evaluate current and future explosives safety risks at the former Fort Ord. The Fort Ord Ordnance and Explosives Risk Assessment Protocol allows for a comparative review of MEC risks at affected sites. Once the baseline risk is evaluated, remedial action alternatives will be developed and evaluated in the FS against the nine CERCLA criteria to identify whether remedial action (e.g., further MEC removal and/or land use controls) will be necessary to mitigate any unacceptable risks. The RI/FS tasks that will be performed to make decisions regarding risk and remedial actions during the Group 1 RI/FS were defined by the AOC and are consistent with those provided in the EPA's current RI/FS guidance document.

Sampling and Analysis Plan (Volume 2)

The G1 SAP describes the procedures, methods, and resources that will be used to conduct the field activities associated with the MEC remedial investigation (RI) in the Phase II portion of the Parker Flats MRA. Additionally, the G1 SAP outlines the process, procedures, and success criteria for the RQA Pilot Study.

The Parker Flats MRA Phase II areas proposed for investigation in the G1 SAP include Parcels E18.1.1, E18.1.2, E18.1.3, E18.4, E19a.1, E19a.2, E20c.2, and portions of E19a.3 and E19a.4. The objective of this RI is to fill data gaps prior to conducting the risk assessment as part of the RI/FS.

The investigation areas identified in the G1 SAP include property within the Parker Flats MRA Phase II that is designated for future reuse as residential, nonresidential, or habitat reserve. Digital geophysical mapping (DGM) investigations, using the best available and appropriate detection technology (BADT), will be performed in areas designated for future residential and nonresidential reuse. Areas that are not suitable for DGM will be investigated using analog BADT.

Investigation of habitat reserve areas will be conducted using two separate investigation methods. The highest risk areas, specifically trails and open areas adjacent to the trails, will be investigated by performing DGM investigations, or investigations using the BADT similar to the future residential and nonresidential areas. The investigation on trails will entail 100 percent DGM investigations to the depth of detection. The remaining habitat reserve areas will be investigated using analog instrument-aided surface and near-surface (within 3 inches) survey investigation methods. The purpose of the surface sweep in the habitat reserve areas will be to identify and remove anomalies that are on or near the surface (within 3 inches). Surface and near-surface finds (MEC and MD) will be fully documented and reviewed by the ESCA RP Team in consultation with the regulatory agencies during the investigation. If the ESCA RP Team in consultation with the regulatory agencies determine that significant near-surface MEC (either high concentration or high-risk unexploded ordnance) has been discovered during the investigation, a field variance will be developed to change the investigation approach to include a focused intrusive investigation to ascertain the limits of the condition. After DGM data are processed, anomalies will be reacquired for excavation and removal.

Fieldwork will be conducted in accordance with the health and safety requirements identified in the explosives siting plan and the site specific safety and health plan presented in the G1 SAP. MEC will be handled, stored, and transported in accordance with the guidelines set forth in the explosives management plan, which are based on federal regulations. Data will be collected and managed (including validation and quality control) in accordance with the quality control procedures outlined in the G1 SAP.

RQA Pilot Study (Volume 2)

The RQA Pilot Study has been prepared to assess the relevance and usefulness of the quality assurance process that has been developed to address regulatory agency concerns regarding the residual risk that remains after MEC removals have taken place, particularly in areas that are designated for future residential use (i.e., unrestricted land use). Because the majority of land identified for future residential use is located within the Seaside MRA and the California State University Monterey Bay (CSUMB) Off-Campus MRA (formerly referred to as the CSUMB MRA), these two MRAs have been selected as the appropriate test areas to conduct the RQA Pilot Study.

Areas in the CSUMB Off-Campus MRA and the Seaside MRA were identified as appropriate test areas. These areas have previously undergone response actions and exhibited relatively high densities of MEC with a variety of hazard classifications. Prior to the study, the areas will be cleared of vegetation, as appropriate, and geophysically investigated using the BADT instrumentation. Anomaly reacquisition and excavation will be conducted in accordance with the procedures outlined in the G1 SAP. The data will be analyzed and the results will be presented in a Technical Memorandum, which will also include an evaluation of the success of the RQA Pilot Study.

1.0 INTRODUCTION

The former Fort Ord is located near Monterey Bay in the northwestern Monterey County, California. Since 1917, portions of the former Fort Ord were used by infantry units for maneuvers, target ranges, and other purposes. Military munitions were fired into, fired upon, or used on the facility in the form of artillery and mortar projectiles, rockets, and guided missiles, rifles and hand grenades, land mines, pyrotechnics, bombs, and demolition materials. Some of these military munitions are still present at the former Fort Ord as either Munitions and Explosives of Concern (MEC) or munitions debris (MD).

This Group 1 Remedial Investigation / Feasibility Study (RI/FS) Work Plan ("the Group 1 RI/FS Work Plan") was prepared by the Environmental Services Cooperative Agreement Remediation Program (ESCA RP) Team ("the ESCA RP Team") on behalf of the Fort Ord Reuse Authority (FORA) in compliance with an Administrative Order on Consent (AOC), which addresses cleanup of portions of the former Fort Ord in Monterey County, California (Figure 1). Group 1 includes the Seaside and Parker Flats Munitions Response Areas (MRAs; Figure 2). The ESCA RP Team consists of FORA's contractors: LFR Inc. (LFR), Weston Solutions, Inc. (WESTON), and Westcliffe Engineers, Inc. (Westcliffe).

The AOC was entered into voluntarily by the United States Environmental Protection Agency (EPA) Region 9, the Department of Toxic Substances Control (DTSC), FORA, and the United States Department of Justice (DOJ) Environment and Natural Resources Division (ENRD; EPA Region 9 CERCLA Docket No. R9-2007-03). This AOC was issued under the authority vested in the President of the United States by Sections 104, 106, and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, 42 United States Code (U.S.C.) §§ 9604, 9606, and 9622.

This effort was sponsored by the Army, Assistant Chief of Staff Installation Management. The content of the information does not necessarily reflect the position or policy of the Government and no official endorsement should be inferred.

1.1 Work Plan Purpose

The purpose of the Group 1 RI/FS Work Plan as defined under Task 3 of the AOC Scope of Work is to propose methodology to obtain the necessary information identified in the Summary of Existing Data Report (SEDR) to characterize the nature and extent of MEC in order to propose a preferred remediation alternative pursuant to CERCLA. In compliance with AOC paragraph 25, at a minimum, the Group 1 RI/FS Work Plan includes plans and schedules for the following activities:

- Collection of data necessary to characterize conditions under investigation
- Risk assessment
- Development and screening of a range of possible remedial alternatives
- Detailed analysis of alternatives

- Development of sufficient information to enable the United States Department of the Army (Army) and/or EPA to select appropriate remedies for each parcel comprising the site

The results of the above activities will be documented in the RI/FS report for use by the Army in developing the Proposed Plan and making a remedial action decision.

1.2 Work Plan Objectives

The objectives of the Group 1 RI/FS Work Plan are to:

- Present the overall RI/FS process for MEC remediation within the Group 1 MRAs
- Provide background information on the Group 1 MRAs as it relates to MEC
- Summarize previous and ongoing MEC investigations, sampling, and/or removal actions in the Group 1 MRAs
- Describe the investigative approaches to collect the data necessary to address data gaps concerning the nature and extent of MEC
- Provide an initial evaluation of the nature and extent of MEC in the environment and identify the potential receptors and routes of exposure to MEC hazards
- Document data requirements for explosives safety risk and response alternative evaluations
- Identify a process for conducting and evaluating a Residential Quality Assurance (RQA) Pilot Study

1.3 Former Fort Ord Munitions Response Program

This section summarizes the munitions response program related to MEC cleanup that was previously implemented at the former Fort Ord by the Army and the subsequent program that was implemented to continue MEC remediation in portions of the former Fort Ord by FORA.

1.3.1 Cleanup Program Under the Army

The former Fort Ord was placed on the National Priorities List (NPL) in 1990, primarily because of chemical contamination in soil and groundwater that resulted from past Army occupation. To oversee the cleanup of the base, the Army, DTSC, Monterey Bay Regional Water Quality Control Board (RWQCB), and EPA entered into a Federal Facility Agreement (FFA). One of the purposes of the FFA is to ensure that the environmental impacts associated with past and present activities at the former Fort Ord are thoroughly investigated and appropriate remedial action taken as necessary to protect the public health and the environment. In accordance with the FFA, the Army is designated as the lead agency under CERCLA for conducting environmental investigations, making cleanup decisions, and taking cleanup actions at the former Fort Ord. The EPA is designated as the lead regulatory agency for the cleanup while the DTSC and RWQCB are supporting agencies.

Since the Base Realignment and Closure (BRAC) listing and closure of Fort Ord, cleanup operations have been performed to address the presence of MEC and to prepare former Fort Ord property for transfer to federal, state, and local agencies and the surrounding Monterey County communities. The Army conducted a number of MEC survey and clearance activities, including geophysical surveys. The Army performed its activities pursuant to the President of the United States' authority under CERCLA Section 104, as delegated to the Army in accordance with Executive Order 12580 and in compliance with the process set out in CERCLA Section 120.

In November 1998, the Army agreed to evaluate MEC at the former Fort Ord and perform a base-wide Munitions Response RI/FS consistent with CERCLA. The base-wide RI/FS program addressed MEC hazards on the former Fort Ord and evaluated past removal actions as well as recommended future remedial actions deemed necessary to protect human health and the environment under future uses. In April 2000, an agreement was signed between the Army, EPA, and DTSC to evaluate MEC at the former Fort Ord subject to the provisions of the FFA. The signatories agreed that the FFA provided the appropriate framework and process to address the Army's MEC activities. The FFA established schedules for performing RI/FSs, and required that remedial actions be completed expeditiously.

The Army's approach to categorizing areas within the former Fort Ord includes track groupings consisting of Track 0 through Track 3. Specifically, track definitions are as follows:

- Track 0: Areas that contain no evidence of MEC and have never been suspected of having been used for military munitions-related activities.
- Track 1: Sites where military munitions were suspected to have been used but, based on results, the sites fall into one of three categories: 1) sites with no evidence to indicate that military munitions were used; 2) sites used for training but military munitions used do not pose an explosive hazard; or 3) sites used for training but military munitions potentially remaining do not pose an unacceptable risk.
- Track 2: Sites where MEC were present and MEC removal has been conducted.
- Track 3: Sites where MEC are known or suspected but investigations have not been initiated or completed.

In addition, to remain consistent with the federal Endangered Species Act (ESA), the Army has completed consultations with the United States Fish and Wildlife Service (FWS) on the Army's predisposal actions, including cleanup of MEC. These consultations have resulted in biological opinions (BOs) that include endangered species incidental take permits. These permits allow impacts to and incidental take of listed species during MEC cleanup activities, but require mitigation measures to be implemented during the MEC cleanup activities to reduce and minimize impacts to the protected species and their habitats.

1.3.2 Process for Early Transfer of Former Fort Ord Property

The transfer of a portion of the former Fort Ord, pursuant to CERCLA Section 120(h)(3)(C), was requested by FORA in a letter dated May 18, 2005. Under CERCLA Section 120(h)(3), the United States is required to provide a covenant in deeds conveying the property, warranting that all remedial action necessary to protect human health and the environment has been taken before the date of transfer. For a federal facility listed on the NPL, CERCLA Section 120(h)(3)(C) allows the EPA Administrator, with concurrence of the governor of the state, to defer the CERCLA covenant requirement. These types of transfers under CERCLA Section 120(h)(3)(C) are typically called "Early Transfers," in which the United States provides the warranty after transfer of the property when all of the response actions necessary to protect human health and the environment have been taken. The period between the transfer of title and the making of this final warranty is known as the "deferral period." Early Transfers allow productive reuse of the property through access while final remediation work is being conducted.

The EPA Administrator, with the concurrence of the governor of the state in which the property is located, may defer the CERCLA warranty requirement if the property is determined to be suitable for transfer. In addition, United States Department of Defense (DOD) and Army policy require that the Military Department proposing to transfer property prepare a Finding of Suitability for Early Transfer (FOSET). This FOSET will be submitted as part of the Covenant Deferral Request, in which the Army will seek approval by the EPA Administrator and concurrence by the governor of the state of the Early Transfer.

On March 31, 2007, the Army and FORA entered into an Environmental Services Cooperative Agreement (ESCA) to provide MEC remediation services during the deferral period, thereby allowing the Army to transfer approximately 3,340 acres of property and the responsibility of removing MEC to FORA as an Economic Development Conveyance (EDC). The former Fort Ord property being transferred under the ESCA is shown on Figure 1 and is collectively referred to as the Areas Covered by Environmental Services (ACES). In accordance with the ESCA, FORA is responsible for addressing all response actions for the property except for those responsibilities retained by the Army. To accomplish this effort, FORA entered into an agreement with the ESCA RP Team to assist in the completion of the MEC cleanup activities in accordance with the ESCA and the AOC. During the ESCA, FORA is responsible for administrative and management program elements, while the ESCA RP Team conducts the MEC remediation under FORA oversight.

1.3.3 FORA ESCA Remediation Program

As defined by the ESCA, the Army prepared a Technical Specifications and Requirement Statement (TSRS) to identify the general specifications for the environmental services to be conducted by FORA under the ESCA RP. The purpose of the ESCA RP is to provide the necessary environmental services to FORA, which include characterization, assessment of risk of explosive hazards, feasibility study (FS), remediation alternatives analysis, and performance of remediation of hazardous substances, including but not limited to MEC, which pose unacceptable risk to human health and the environment. A primary benefit of the

ESCA RP is to facilitate completion of these activities in a manner that is more expeditious than could be performed by the Army.

The primary objective of the ESCA RP is to complete a timely cleanup of the property in accordance with the ESCA and AOC, while promoting and enhancing the public health and safety of current and future users of the property. In addition, the ESCA RP allows remediation activities to be integrated with community reuse objectives, such as the construction of street improvements and backbone utility infrastructure.

1.4 Preliminary RI/FS Scoping and Implementation

Based on an evaluation of the available data, Conceptual Site Models (CSMs), preliminary assessments of risk, and regulatory pathway requirements, the nine MRAs were consolidated into four groups (i.e., Group 1 through Group 4). Each group consists of one or more MRAs that have similar pathway-to-closure characteristics. The four groups are shown on Figure 2. This work plan focuses on the Group 1 MRAs.

Group 1 includes the Seaside and Parker Flats MRAs (Figure 2). The Seaside MRA has been divided into two phases of work. The first phase was completed by the Army in 2004; however, approximately 35 acres of land within the Seaside MRA were designated by the Army as Special Case Areas (SCAs; Figure 3). The second phase of work, identified as the Phase II Seaside MRA Removal Action, is currently being conducted by FORA under the ESCA RP. The Phase II Seaside MRA Removal Action is designed to collect additional data to fill data gaps associated with the SCAs in support of the RI/FS process and to prepare the MRA for reuse. The Phase II Seaside MRA Removal Action is being conducted under the Final Site-Specific Work Plan Addendum ("the Final SSWP Addendum"), which was reviewed and approved by the regulatory agencies (ESCA RP Team 2008a). The results of the Phase II Seaside MRA Removal Action will be incorporated into the RI/FS report for Group 1.

The Parker Flats MRA has been divided into two phases of work, identified as Parker Flats MRA Phase I and Parker Flats MRA Phase II (Figure 4). The Army completed a Track 2 Munitions Response RI/FS report for the Parker Flats MRA Phase I (MACTEC 2006). The Army is also in the process of finalizing a Record of Decision (ROD) for the Parker Flats Phase I. Therefore, only the Parker Flats Phase II area is being considered in this work plan. The remediation plan documented in the Army ROD for the Phase I area will be implemented by the ESCA RP Team.

1.4.1 Summary of Existing Data Report

A SEDR was completed for the ACES by the ESCA RP Team as required under Task 2 of the AOC (ESCA RP Team 2008c). In the SEDR, ESCA parcels were combined into nine MRAs to facilitate the implementation of the AOC. The SEDR provided a site overview, evaluation of existing data, identification of data gaps, a CSM including an initial assessment of explosives safety risks, and proposed future use for each MRA. The SEDR also presented

conclusions and recommendations for further actions and formed the basis for the remedial investigation (RI) planning efforts.

One of the goals of the SEDR was to develop a process to complete the remaining steps in the sequence and phasing of the CERCLA activities, as described in the AOC, within Group 1. The overall process for navigating Group 1 through the CERCLA process and a detailed regulatory pathway to closure was developed and presented in the SEDR. The regulatory pathway for Group 1 considers the conclusions and recommendations presented in the CSMs for each of the Group 1 MRAs; the CSMs are discussed in more detail in Section 3.0 of this work plan.

The proposed pathway to closure for Group 1 is depicted on Figure 5. Group 1 enters the pathway beginning with preparation of a Non-Time-Critical Removal Action (NTCRA) and RI work plan and carrying the CERCLA process through the execution of a ROD. Because a substantial amount of investigation and removal action is anticipated to occur during the RI within Group 1, it is expected that the MEC data that are encountered during the RI stage will be comparatively small in quantity and of sufficient quality that we proposed to intrusively investigate all anomalies during the RI stage of the CERCLA process. This approach will allow the management of Group 1 through the CERCLA process with the goal of achieving a ROD that documents that no further remedial action is required (NFA ROD) with institutional controls. Following execution of the ROD, an Institutional Controls Implementation Plan will be prepared.

1.5 Work Plan Organization

This Group 1 RI/FS Work Plan was prepared in accordance with the EPA "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA 1988b). This Group 1 RI/FS Work Plan is organized in two volumes, which contain the following components:

Volume 1 – Work Plan

- **Executive Summary**
- **Section 1 – Introduction.** This section includes a general explanation of the reasons for the RI/FS and the expected results or goals.
- **Section 2 – Physical Setting and History.** This section provides an overview of the current understanding of the physical setting, history, and condition of the Group 1 MRAs.
- **Section 3 – Initial Evaluation.** This section presents an initial characterization of military training activities conducted within the Seaside and Parker Flats MRAs based on the information documented in the SEDR.
- **Section 4 – Work Plan Rationale.** This section presents the work plan approach, documentation of data requirements for both the explosives safety risk assessment and the alternatives evaluation, and an explanation of how RI/FS tasks will meet Data Quality Objectives (DQO) needs.

- **Section 5 – Group 1 RI/FS Tasks.** This section summarizes the 11 tasks for completing an RI/FS.
- **Section 6 – Scheduling and Reporting.** This section includes a generalized outline for the RI/FS report and an anticipated project schedule.
- **Section 7 – References.** This section provides a list of references to pertinent documents cited in this work plan.

Volume 2 – Sampling and Analysis Plan

- **Section 1 – Introduction.** This section includes the general purpose and scope of the Sampling and Analysis Plan (SAP).
- **Section 2 – Technical Management Plan.** This section outlines the procedures and methods that will be used to complete the field investigation removal activities.
- **Section 3 – Explosives Management Plan.** This section provides the minimum procedures and safety and health requirements applicable to the acquisition, storage, accountability, and transportation of demolition materials and MEC.
- **Section 4 – Explosives Siting Plan.** This section outlines the procedures that will be used to perform MEC identification, treatment operations, and storage of explosives.
- **Section 5 – Geophysical Investigation Plan.** This section outlines the geophysical surveys that will be conducted to establish and record the locations of geophysical anomaly targets and the RQA Pilot Study.
- **Section 6 – Site Safety and Health Plan.** This section establishes the general guidelines and procedures to ensure protection of personnel and the public while performing the field investigation and removal operations.
- **Section 7 – Location Surveys and Mapping Plan.** This section outlines the tools and methodologies that will be used for the efficient and accurate completion of surveying, mapping, and Geographical Information System (GIS) operations.
- **Section 8 – Work Management Plan.** This section provides an anticipated schedule for the completion of the activities presented in the SAP.
- **Section 9 – Property Management Plan.** This section provides procedures for the management of property during the project.
- **Section 10 – Sampling and Analysis Plan.** This section includes a summary of sampling and analysis procedures to be implemented during non-MEC related activities.
- **Section 11 – Quality Control Plan.** This section establishes and describes the quality requirements for completion of the field investigation and removal operations.
- **Section 12 – Environmental Protection Plan.** This section outlines the procedures that will be implemented to protect natural resources.
- **Section 13 – Investigation-Derived Waste Plan.** This section outlines the procedures for managing wastes that are generated during the field investigation and removal operations.

- **Section 14 – References.** This section provides a list of references to pertinent documents cited in the G1 SAP.

2.0 HISTORY AND PHYSICAL SETTING

This section provides a summary of the MEC-related history, physical setting, and land use related to the former Fort Ord and the Group 1 MRAs. An evaluation of these components as related to the development of proposed investigation field activities is included in Section 3.0 of this work plan.

2.1 MEC-Related History

In 1917, the Army bought a portion of the Main Garrison and East Garrison and nearby lands on the eastern side of the former Fort Ord to use as a maneuver and training ground for field artillery and cavalry troops stationed at the Presidio of Monterey. Prior to acquisition by the Army, the land was in agricultural use. No permanent improvements were constructed until the late 1930s. In the 1940s, more land was purchased to expand the development of the Main Garrison area and the beach range area was given to the Army. With up to 15,000 active duty military personnel and 5,100 civilians working on site during its active history, the former Fort Ord Garrison areas resembled a mid-sized city, with accompanying family housing, medical facilities, warehouses, office buildings, industrial complexes, and gas stations.

Fort Ord was used to train Army infantry, cavalry, and field artillery units until formal closure. In support of the training of soldiers, military munitions were used at the ranges throughout the former Fort Ord. As a result of the training activities, a wide variety of conventional MEC (related to infantry and artillery training) have been encountered in areas throughout the former Fort Ord. The MEC encountered at the former Fort Ord have been either unexploded ordnance (UXO) or discarded military munitions (DMM).

The Group 1 MRAs includes all or portions of several Munitions Response Sites (MRSs), which have been evaluated for the presence of MEC, and portions of property that lie outside the MRS boundaries, which have had little or no evaluation for the presence of MEC. Within the MRS boundaries, these evaluations have included one or more of the following actions: site reconnaissance and surface and/or subsurface MEC investigation and/or removal actions. The evaluation of those portions of the parcels lying outside of the MRS boundaries included: literature reviews and, in some cases, surface removals completed within the accessible areas. The MEC-related history for the Seaside and Parker Flats MRAs is summarized in the following sections.

2.1.1 Seaside MRA

By 1945, 18 firing ranges and training sites were established within the boundaries of the 8,000-acre multi-range area, which was the area around the perimeter of the former impact area (Figure 1). The Seaside MRA lies on the westernmost part of the former impact area. The Seaside MRA contained the former firing points and some of the former targets associated with the following:

- Small arms ammunition training areas, which included Ranges 18, 19, 20, 21, 22, 23, 46, and 59
- Non-firing target range training area, which included Old Range 22 and Range 23M
- Mortar and antitank training area, which included Range 48
- Booby trap training area, which included Range 50

According to the known configuration of the ranges, weapons were fired to the east and southeast from these firing points toward the center of the impact area. It is expected that munitions activity associated with these ranges would have occurred within the firing points.

Numerous investigations and removal actions were performed by the Army in the Seaside MRA. These actions resulted in complete MEC removal to a depth of 4 feet, with the exception of 35 acres identified by the Army as SCAs and a narrow area west of General Jim Moore Boulevard, which was outside the western boundaries of MRSs established within the MRA. Because the Army's investigation activities did not include the narrow area west of General Jim Moore Boulevard, the status of MEC in this area represents a data gap.

More detailed information on the MEC-related history and nature and extent of contamination within the Seaside MRA has been presented in the SEDR CSM for the Seaside MRA. The CSM from the SEDR is provided in Appendix A of this work plan.

2.1.2 Parker Flats MRA

The historical use of the Parker Flats MRA Phase II areas was for troop training and maneuvers. Because the northern portion of the Parker Flats MRA (north of Gigling Road) prior to 1940 was privately owned agricultural land, it is unlikely that this area was used for military training until after this time. To facilitate previous MEC investigations and removal activities, the historical use areas were divided into MRSs.

The MRSs within the Parker Flats MRA Phase II include MRS-4A, MRS-27A (portion), MRS-27B (portion), MRS-27C, MRS-44EDC/PBC, and MRS-15MOCO.2. The historical uses for these specific MRSs in the Parker Flats MRA Phase II include the following:

- MRS-4A was used as a former Chemical, Biological, and Radiological Training Area.
- MRS-27A (Training Site 1), MRS-27B (Training Site 2), and MRS-27C (Training Site 3) were used as overnight bivouac areas.
- MRS-15MOCO.2 was used as antitank weapons and 40mm grenade ranges and contained the firing lines for Ranges 44 and 45.
- MRS-44EDC and MRS-44PBC were likely used for military weapons and troop training; however, the actual historical use is unknown.

Previous work in the Parker Flats MRA includes numerous site investigations, sampling investigations, and removal actions. More detailed information on the MEC-related history and nature and extent of contamination within the Parker Flats MRA Phase II has been

presented in the SEDR CSM for the Parker Flats MRA Phase II. The CSM from the SEDR is provided in Appendix B of this work plan.

2.2 Physical Setting

The former Fort Ord is located 80 miles south of San Francisco and occupies approximately 28,000 acres adjacent to Monterey Bay and the cities of Marina, Seaside, Sand City, Del Rey Oaks, and Monterey. State Highway 1 crosses the western portion of the former Fort Ord, separating the beachfront from most of the installation. Laguna Seca Recreational Area and Toro Regional Park border the former Fort Ord to the south and southeast, respectively, as do several small communities, such as Toro Park Estates and San Benancio (Figure 1). The physical settings for the Seaside and Parker Flats MRAs are summarized in the following sections.

2.2.1 Seaside MRA

The Seaside MRA is located in the southwestern portion of the former Fort Ord, bordered by the City of Seaside and General Jim Moore Boulevard to the west, the former impact area to the east, Eucalyptus Road to the north, and additional former Fort Ord property to the south (Figures 1 and 3). The Seaside MRA is wholly contained within the jurisdictional boundaries of the City of Seaside.

The Seaside MRA encompasses approximately 419 acres and contains the following four United States Army Corps of Engineers (USACE) property transfer parcels: E23.1, E23.2, E24, and E34 (Figure 3).

The terrain of the Seaside MRA varies from flat to moderately rolling hills. The elevation ranges from approximately 210 to approximately 520 feet mean sea level (msl) with 2 to 15 percent slopes. Vegetation consists primarily of maritime chaparral with patches of non-native grassland and scattered stands of coastal and inland coast live oak woodlands.

The Seaside MRA overlies the Seaside Groundwater Basin, which is structurally complex and divided into several sub-basins. Groundwater is generally encountered at a depth greater than 100 feet below ground surface (bgs). No significant surface-water features or delineated wetlands are reported to be present in the MRA.

More detailed information on the geology, vegetation, surface water, and groundwater of the Seaside MRA has been presented in the SEDR CSM for the Seaside MRA. The CSM from the SEDR is provided in Appendix A of this work plan.

2.2.2 Parker Flats MRA

The Parker Flats MRA is located in the central portion of the former Fort Ord, bordered by the California State University Monterey Bay (CSUMB) Off-Campus MRA (formerly referred to as the CSUMB MRA) and the County North MRA (formerly referred to as the Development North MRA) to the north, the Interim Action Ranges MRA to the south,

CSUMB campus property to the west, and additional former Fort Ord property to the east and southeast (Figures 1 and 4). The Parker Flats MRA is contained within the jurisdictional boundaries of the City of Seaside and the County of Monterey.

The Parker Flats MRA (Phase I and Phase II areas) encompasses approximately 1,180 acres and fully contains USACE property transfer parcels E18.1.1, E18.1.2, E18.1.3, E18.4, E19a.1, E19a.2, E19a.5, E20c.2, E21b.3, L20.18, L23.2, and L32.1, and portions of USACE property transfer parcels E19a.3 and E19a.4 (Figure 4). The area completed under the Phase I activities was approximately 698 acres; the remaining approximately 482 acres were included under the Phase II activities.

The terrain of the Parker Flats MRA is primarily rolling hills with moderate to steep slopes. The elevation ranges from approximately 280 to approximately 490 feet msl with 2 to 15 percent slopes. Vegetation in the Parker Flats MRA consists primarily of coastal coast live oak woodland with smaller areas of maritime chaparral, grassland, and coastal scrub. Vegetation varies from sparsely vegetated areas to heavy brush.

The Seaside and Salinas Groundwater Basins are the main hydrogeologic units that underlie the MRA. The depth to groundwater is estimated to be greater than 100 feet bgs. There are no aquatic features (i.e., vernal pools, ponds) or delineated wetlands reported to be present on the Parker Flats MRA.

More detailed information on the geology, vegetation, surface water, and groundwater of the Parker Flats MRA Phase II has been presented in the SEDR CSM for the Parker Flats MRA Phase II. The CSM from the SEDR is provided in Appendix B of this work plan.

2.3 Land Use

The former Fort Ord consists of both developed and undeveloped land. This section summarizes the current and future land uses for Group 1.

2.3.1 Current Land Use

The Group 1 MRAs are currently undeveloped open space, with the exception of paved roadways, such as General Jim Moore Boulevard, Eucalyptus Road, and Parker Flats Road, and a major utility corridor for the high-power transmission line that runs along General Jim Moore Boulevard and across the interior portion of the Parker Flats MRA. There are residual structures that supported training activities at the MRAs. Most of these structures have been abandoned and are scheduled for demolition.

Reportedly, the Parker Flats MRA, north of Eucalyptus Road, is accessed by day recreational and equestrian users, including hikers, joggers, mountain bikers, dog walkers, and horse riders. There is also evidence of trespasser activity and illegal dumping in both of the Group 1 MRAs.

More detailed information on the current land uses of the Seaside and Parker Flats MRAs has been documented in the SEDR as CSMs. The CSMs for the Seaside and Parker Flats MRAs from the SEDR are provided as Appendices A and B, respectively, of this work plan.

2.3.2 Future Land Use

The future land uses are primarily based upon the Fort Ord Base Reuse Plan, adopted by FORA on June 13, 1997 (FORA 1997). Other sources of future land use information include public benefit conveyance, negotiated sale requests, transfer documents, the Installation-Wide Multispecies Habitat Management Plan (HMP; USACE 1997), and the Assessment East Garrison – Parker Flats Land Use Modifications, Fort Ord, California (Zander 2002).

Future land use categories and uses approved in the Fort Ord Base Reuse Plan generally include: residential, such as single-family homes; nonresidential, such as equestrian use and supporting facilities, educational and institutional facilities, office and research parks, light-industrial and business parks, and commercial and retail facilities, including roadways and utility corridors; and habitat reserve, such as equestrian facilities and open space. Additional land uses include visitor-related facilities, such as lodging, golf courses, and beach and community parks.

Future land uses for Group 1 include: residential and nonresidential areas in the Seaside MRA; and residential, nonresidential, and habitat reserve areas in the Parker Flats MRA. More detailed information on the future land uses of the Seaside and Parker Flats MRAs has been documented in the SEDR as CSMs for the Seaside MRA and the Parker Flats MRA Phase II. The CSMs from the SEDR are provided as Appendices A and B, respectively, of this work plan.

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3.0 INITIAL EVALUATION

An initial evaluation of the Group 1 MRAs was conducted during development of the SEDR. Development of the CSMs included an evaluation of the known historical military use and associated munitions-related activities, as well as existing information related to previous munitions response actions for each of the MRAs. These evaluations included facility profiles, physical profiles, release profiles, land use profiles, ecological profiles, and pathway analyses, to include identification of source areas, accessibility, receptors, and receptor activities that could result in human health risks related to the potential presence of MEC remaining within the MRAs. The CSMs also provided recommendations and conclusions, which are summarized in Section 4.0 of this work plan.

The following sections provide the initial evaluations presented in the CSMs for the Group 1 MRAs to support the work plan rationale presented in Section 4.0 of this work plan.

3.1 Seaside MRA Evaluation

The documented historical use of the Seaside MRA was a weapons and troop training area (Appendix A). The MEC encountered to date within the MRA are consistent with its documented historical use. As the majority of the MRA has undergone a removal action, the risk has been reduced, with the exception of approximately 35 acres of subsurface area designated by the Army as SCAs and the hillside west of General Jim Moore Boulevard. The initial evaluation of previous munitions response actions within the Seaside MRA indicated that data gaps needed to be filled to more fully characterize the MRA. These data gaps consist of the SCAs and the hillside west of General Jim Moore Boulevard. The results of the Phase II Seaside MRA Removal Action will be incorporated into the Group 1 RI/FS report.

3.2 Parker Flats MRA Phase II Evaluation

The documented historical use of the Parker Flats MRA Phase II was as a troop training area (Appendix B). The MEC encountered to date within the investigated areas of the MRA are consistent with its documented historical use; however, based on the limited investigations conducted to date, the Phase II portion of the Parker Flats MRA has been identified as a data gap. Therefore, MEC investigation is necessary to confirm the current understanding of military activities within the Phase II portion of the MRA. Although this area has not been investigated, it is anticipated that MEC similar to the types and quantities encountered in the vicinity will be found during future investigations.

Removal actions have been completed in MRS-15 MOCO.2, MRS-44 PBC, and MRS-04A; therefore, the collection of additional data is not anticipated to be required in these areas.

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4.0 WORK PLAN RATIONALE

This Group 1 RI/FS Work Plan outlines the steps to be taken: 1) to fill data gaps in the Parker Flats MRA Phase II; 2) to define the nature and extent of MEC contamination; 3) to assess explosives safety risk that may be present; and 4) to develop, screen, and evaluate alternatives to reduce the potential explosives safety risk to current and future property owners and the general public. The results of the above steps will be documented in the RI/FS report for use by the Army in developing the Proposed Plan and making a decision on remedial action.

This section outlines the components of the Group 1 RI/FS Work Plan that will be used to complete the RI/FS process, develop the RI/FS report, and support an Army remedial action decision. This section also provides a summary of the data needs and information gathering tools that will be used during the RI/FS. The major decision points to be addressed during development of the RI/FS process are as follows:

- Is the site characterization data of known and sufficient quality to adequately characterize the nature and extent of MEC contamination?
- Is the site characterization data of known and sufficient quality to support completion of an explosives safety risk assessment?
- What are the remedial action alternatives, and which alternative(s) meet the nine CERCLA criteria, making it appropriate to mitigate explosives safety risks?

Based on the initial evaluation provided in the SEDR, as summarized in Section 3.0 of this work plan, the following sections describe the RI/FS approaches and data needs for Group 1.

4.1 Summary of the Approach for Group 1

4.1.1 Seaside MRA

The ESCA RP Team is currently completing the Army's NTCRA within the Seaside MRA under the Phase II Seaside MRA Removal Action, as presented in the Final SSWP Addendum (ESCA RP Team 2008a), in order to mitigate the risk related to the potential existence of MEC and fill identified data gaps. The Phase II Seaside MRA Removal Action will collect sufficient data to fill remaining data gaps to complete the RI/FS report and support the Army's remedial action decision. Therefore, no additional investigative field activities are proposed for the Seaside MRA.

However, an RQA Pilot Study will be conducted in the Seaside MRA to assess the potential residual risk, if any, posed by undetected MEC, following MEC removal actions, in a portion of the areas planned for future residential development. The RQA Pilot Study work plan is presented in Volume 2 of this Group 1 RI/FS Work Plan.

4.1.2 Parker Flats MRA Phase II

The nature and extent of MEC contamination within the Parker Flats MRA Phase II areas have not been fully characterized. Data from limited investigations in these areas along with results from previous munitions response actions conducted by the Army adjacent to the Phase II areas provide an overall indication of the nature and extent of the MEC contamination. The data gaps, as identified in the SEDR, will be filled during the RI. The following actions will be conducted during the RI to fill these data gaps and support the refinement of the CSM and analysis of risk for inclusion in the RI/FS report:

- Collect data, sufficient to support the MEC RI, in all areas of the Parker Flats MRA Phase II where limited data are available.
- Conduct an RQA Pilot Study in areas where MEC investigation and removal actions have already been completed, to assess the potential residual risk, if any, posed by undetected MEC in areas planned for future residential development.

The RQA Pilot Study work plan is presented in Volume 2 of this Group 1 RI/FS Work Plan. The field investigation is detailed in the G1 SAP presented as Volume 2 of this Group 1 RI/FS Work Plan.

4.2 Data Quality Objectives

The RI/FS process requires the collection of data for regulatory compliance and decision-making purposes. The data collected must have sufficient quality and quantity to support decision making.

The DQO process developed by EPA was employed as a systematic planning tool to establish criteria for data quality and for guiding data collection. The results of that planning process are included in the following sections of this work plan, and in the G1 SAP and Quality Assurance Project Plan (QAPP) presented in Volume 2 of this Group 1 Work Plan.

4.3 Validation of Existing Data

The SEDR identifies and summarizes existing data for the Group 1 MRAs, including the results of previous investigations and removal actions. The validation of existing data is necessary to establish that the data are of known and sufficient quality to be usable in the RI/FS to support completion of an explosives safety risk assessment and the evaluation of remedial alternatives.

Existing data generally fall into the following three categories:

- Physical Setting and Land Use
- Historical Records and Military History
- MEC Response Actions

The physical setting and land use category data are well understood. Validation efforts will consist of verifying that the information is up to date, accurate, and complete. Historical records, military history, and MEC investigations and removal actions data will be reviewed and validated as described below.

4.3.1 Historical Records and Military History

The Army researched historical records and documented the military history of Fort Ord in a series of Archive Search Reports. The Army historical records and military history for the Group 1 MRAs will be reviewed to determine if the munitions found during previous munitions response actions are consistent with the initial evaluation of each MRA. The following information will be reviewed, as appropriate:

- Historical Records
  - Archive Search Reports
  - Non-military history of the former Fort Ord
  - Specific military training / use of each MRA
- Military History / Field Manuals
  - Training practices by era
  - Munitions types and use in various operations, during various time periods

4.3.2 MEC Investigations and Removal Actions

The previous munitions response actions that have been performed will be evaluated in order to assess the quality of the response actions and resulting data, using the criteria presented in the following subsections.

4.3.2.1 Equipment Evaluation

An evaluation of the equipment used during previous munitions response actions will focus on how the equipment was employed and maintained. The evaluation will involve checking and reviewing the following items:

- Manufacturer calibration and operating procedures
- Calibration documentation, including frequency and null points
- Calibration records or logs
- Operator training records
- Quality assurance/quality control (QA/QC) of equipment calibration and usage
- Historical evaluations of equipment detection capabilities (i.e., geophysical prove-outs, seeding operations, etc.)

4.3.2.2 Adequacy of Removal Approach

Items that will be evaluated to assess the adequacy of previous removal approaches will include depth of sampling/removal and future land use. In addition, the depth at which items were found will be compared with maximum calculated penetration depths and calculated detection depth limits. Documentation that will be used to evaluate the previous operations includes:

- munitions response reports and associated maps
- reconnaissance and sampling data
- site work plans
- FORA ESCA RP database and/or Military Munitions Response Program (MMRP) database
- field logs and field maps

Additional items not listed above may be reviewed, if they are relevant to the evaluation of past removal actions.

4.3.2.3 Collection and Management of Field Data

The Army has evaluated the collection and management of field data for previous munitions response actions. The evaluation conducted by the Army will be used to support the validation of data collected by the Army and its contractors, which included the following activities:

- Data QA (If there was no evidence that data QA was conducted, a 10 percent QA effort was performed.)
- The Army performed a 100 percent QC review of the data in the MMRP database previously generated from work conducted by prior munitions response contractors. The review followed an approved Standard Operating Procedure (SOP). This evaluation included a review of the field grid records and the MMRP database. It also included a review of Human Factors Application, Inc. (HFA) data provided in the after-action report (HFA 1994). The USACE implemented a QA review of 10 percent of the data reviewed by Parsons. The QA review included a comparison of the data set with the data set reported in the contractor after-action reports. The requirements of the USACE QA review are described in the SOP. The purpose of the QC data review was to complete a 100 percent check of all available grid records to identify discrepancies between the after-action reports and the grid records, if any. Discrepancies were then researched and appropriate corrections were made in the MMRP database.
- Parsons used a digital process for field data collection, which reduced the data issues associated with the use of grid sheets (such as human errors, inconsistent munitions nomenclature, etc.). Parsons' data were managed in accordance with the quality procedures outlined in its Programmatic Work Plan (PWP; Parsons 2004) and had to

meet the standards of the MMRP database, managed by USACE, prior to loading the data into the database.

4.3.2.4 Completeness of Existing Records and Data Gaps

The completeness of existing records and the identified data gaps will be evaluated. The records will be reviewed to determine if there is enough defensible data to 1) assess whether or not the work was completed according to contractual requirements, 2) make recommendations on the adequacy of the removal actions, and 3) identify data gaps, if any, that may need to be filled to fully evaluate the adequacy of the response action.

4.3.2.5 Accuracy of Site Boundaries

Site boundaries are of particular importance to the completion of the RI/FS. Site boundaries were first presented as part of the 1993 Archives Search Report (USACE 1993). These boundaries served as a foundation for the initial investigation under the MMRP. Since that time, site boundaries have been modified, based on results of MEC investigations and to support property transfer. The evaluation of previous work will include an evaluation of existing information to determine whether the establishment of site boundaries is accurate, based on historical information and removal data, and whether the surveying method used to delineate the site boundaries was accurate.

4.4 RQA Pilot Study

The Group 1 RI/FS Work Plan includes an RQA Pilot Study work plan, which is presented in Volume 2 of this work plan. It is recognized that an MEC removal action may not successfully acquire and recover all MEC at the site. The regulatory agencies have expressed concern regarding the residual risk that remains after MEC removals have taken place, particularly in areas that are slated for residential development (i.e., unrestricted land use). In an effort to satisfy regulatory concerns, the RQA process, was developed to allow the regulators to gain comfort with the acceptability of a parcel, where MEC removal was conducted, for residential use (and other sensitive uses). As specified in the ESCA, FORA and their response contractor were tasked to develop an RQA Pilot Study, which includes recommending areas for inclusion in the study and developing success criteria to be used by EPA and DTSC to determine if and when the RQA process will be applied to other designated residential parcels covered by the ESCA. The effort is also intended to satisfy the requirements of the ESCA for a RQA pilot study. The relevance and usefulness of the RQA process will be tested in the RQA Pilot Study. The results of the Pilot Study will be considered in developing and evaluating remedial alternatives in the FS.

4.5 Fill Data Gaps / Collect Additional Data

Based on the initial evaluation, it was determined that additional data should be collected to fully characterize the MRAs, and to support an explosives safety risk assessment and remedy selection for Group 1. The proposed scope is to conduct an intrusive investigate on 100

percent of the data gap areas during the RI. This approach will minimize the uncertainty during the FS and is expected to result in an NFA ROD with institutional controls.

To achieve this goal, a high level of data collection effort is incorporated into the RI fieldwork approach, while considering the future reuses of the MRA. The DQOs related to the MEC investigation planned in the Parker Flats MRA Phase II are included in Volume 2 of this Group 1 RI/FS Work Plan. The DQOs for the Seaside MRA are documented in the Final SSWP Addendum for the Phase II Seaside MRA Removal Action (ESCA RP Team 2008a).

4.5.1 Seaside MRA

The Army's 100 percent digital geophysical survey for MRS-15SEA.1-4 is being expanded by geophysically mapping and investigating anomalies in the SCAs and the hillside west of General Jim Moore Boulevard. This investigation is being conducted to fill a data gap to support completion of the RI. A detailed field investigation plan for this area was presented in the Final SSWP Addendum (ESCA RP Team 2008a).

4.5.2 Parker Flats MRA Phase II

Data gaps identified in Section 4.1.2 will be addressed during the RI as outlined below based on future land use category. A detailed field investigation plan is presented in Volume 2 of this Group 1 RI/FS Work Plan.

Residential and Non-Residential Development Parcels

The investigation of future residential or nonresidential development areas will be conducted by performing 100 percent digital geophysical mapping (DGM), using the best available and appropriate detection technology (BADT). Areas that are not suitable for DGM will be investigated using analog BADT. The objective of the geophysical investigation is to accurately locate, investigate, and remove all geophysical anomalies that potentially represent MEC in the subsurface. Vegetation will be cut to the extent possible while preserving the trees; however, the limbs of the trees will be trimmed to maximize the DGM surveys.

Habitat Reserve Areas

The habitat reserve areas will be investigated in two parts: 1) conducting a DGM or BADT investigation along trails; and 2) conducting instrument-aided surface and near-surface (within 3 inches) surveys of the remainder of the habitat reserve area. The highest use areas, specifically trails and open areas adjacent to the trails (extending a maximum of 5 feet off the trail), will be investigated by performing 100 percent DGM, or investigations using the BADT, to the depth of detection similar to the residential and non-residential development areas. The rationale for conducting this investigation is that trails are the highest use areas, and erosion along the trails could increase the potential for encountering MEC.

The purpose of the surface sweep in the habitat reserve areas will be to identify and remove anomalies that are on or near the surface (within 3 inches). Surface and near-surface finds (MEC and MD) will be fully documented and reviewed by the ESCA RP Team in consultation with the regulatory agencies during the investigation. If the ESCA RP Team in consultation with the regulatory agencies determine that significant near-surface MEC (either high concentration or high-risk UXO) has been discovered during the investigation, a field variance will be developed to change the investigation approach to include a focused intrusive investigation to ascertain the limits of the condition.

4.6 Data Analysis

It is necessary to analyze both existing and newly collected data to continuously update the CSMs and fully characterize the Group 1. The following questions will be answered during this ongoing data analysis:

- Is there a clear understanding of current/future land use and current physical characteristics of the area?
- Does historical information indicate that military munitions may have been used within the MRA?
- Are MEC and MEC-related materials being found consistent with the documented historical usage of the area?
- Was the MEC removal completed in the appropriate area of the site?
- Do MEC found at the site indicate undocumented historical munitions use of the site?
- Should the MRA be subdivided into separate units or areas?
- Were the geophysical instruments used during the investigations and removal actions able to detect the suspected MEC items at the expected depths of penetration?
- Can the removal data be used to support an evaluation of alternatives for the FS?
- Can the removal data be used to support explosives safety risk management decision making?

If the results of the above analysis present a strong weight of evidence to support that the existing data is usable for defining the nature and extent of contamination, completion of an explosives safety risk assessment and FS, as determined by the project team (consisting of the EPA, DTSC, FORA, and the Army), the MRA will proceed to the risk assessment phase.

4.7 Explosives Safety Risk Assessment

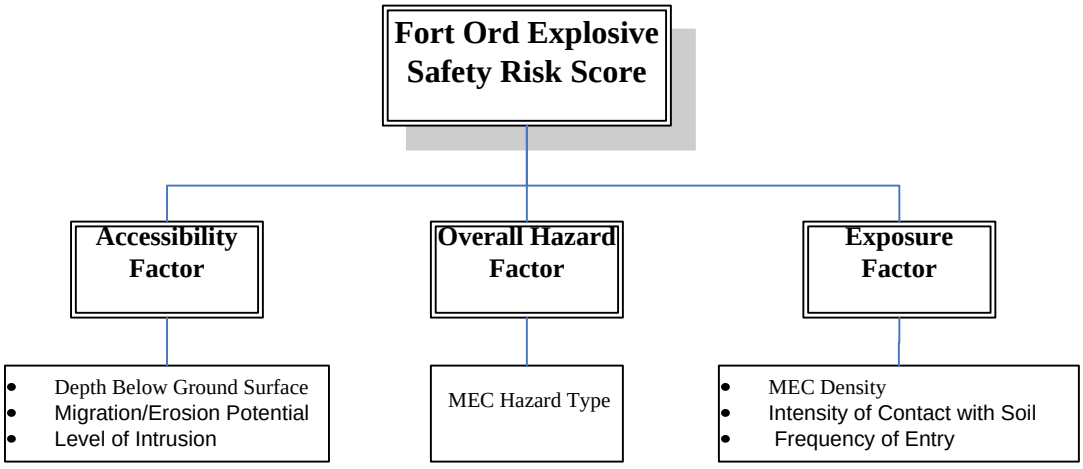
The Fort Ord Ordnance and Explosives Risk Assessment Protocol (“the Protocol") will be used to assess the hazards posed by MEC for receptors based on future land use (Malcolm Pirnie 2002). Unlike typical risk assessments that evaluate potential exposures to hazardous substances in environmental media, the Protocol does not calculate a numerical probability of adverse effects or a hazard index. Rather, it relies on an assumption that any encounter with

MEC will result in an adverse effect, and provides a qualitative description of the explosives safety risk, based on the likelihood of encountering an MEC item combined with the potential of the item to cause a serious injury if it functions.

The Protocol will be used to assess the baseline risk for Group 1 based on SEDR and RI data and future land use as identified in the Final Fort Ord Reuse Plan in order to provide an estimate of the risks posed by current site conditions and assess whether a past (or planned) removal or remedial action was (or will be) effective in reducing those risks.

The Protocol is used to develop and perform a comparative evaluation of various remedial alternatives during the FS. Two matrices combine six of the input factors into overall scores for Accessibility and Exposure. A third matrix combines the scores for Accessibility and Exposure with the seventh input factor, Overall Hazard, to produce a qualitative score for estimating explosives safety risk.

The seven inputs to the explosive safety score are outlined below.



Data needs for the explosives safety risk assessment will be documented in the RI and will include:

- Physical site characteristics
- MEC types, distribution, and previously identified hazard categories
- MEC penetration depths
- Land use (Current/Future)
- Receptors (types/subpopulations, sensitivities, numbers/density, locations, activity levels/patterns)

4.8 Identification of ARARs

Overall, three types of ARARs are defined by the EPA (EPA 1988a) and will be considered in the Group 1 RI/FS:

- Chemical-specific or ambient ARARs - Health- or risk-based numerical values for specific hazardous substances or contaminants
- Action-specific ARARs - Technology-based requirements triggered by the type of remedial action under consideration. This category also includes performance- and design-specific requirements, such as restrictions on the appearance of or noise from a remedial system
- Location-specific ARARs - Impose restrictions on certain types of activities or contaminant concentrations in certain environmentally sensitive areas such as wetlands, flood plains, and historic sites

4.8.1 Initial Identification of Potential ARARs

The Army has conducted a detailed evaluation and identification of potential ARARs and to-be-considered criteria (TBCs) requirements potentially applicable to munitions response actions at the former Fort Ord. The list of potential ARARs was based on existing/previous Army decisions regarding munitions response actions (MACTEC 2007). These previously identified ARARs were reviewed and selected for consideration during the Group 1 RI/FS process. This initial list of potential ARARs is included in Table 1.

4.8.2 Solicitation of ARARs

On behalf of the Army and FORA, the ESCA RP Team will solicit and communicate with the DTSC regarding the identification of State of California ARARs and TBCs for the Group 1 RI/FS. In accordance with 40 CFR 300.400(g), the state will identify those chemical-, location-, and action-specific ARARs or TBCs that are: applicable to the release or remedial action being contemplated; otherwise relevant and appropriate; or advisories, criteria, and guidance useful in developing the remedy.

In addition, ESCA RP Team is responsible for identifying all federal ARARs, and will obtain a review of the ARARs from the EPA and the Army.

The identification of ARARs or TBCs can be an iterative process; therefore, ARARs may be updated throughout the Group 1 RI/FS process, as necessary, and will become final only when the ROD is signed. At a minimum, the initial list of potential ARARs in Table 1 will be reviewed after the initial screening of alternatives has been completed, but before initiation of the detailed analysis of alternatives that will be conducted as part of the FS.

4.9 Identifying Appropriate Remedial Actions to Mitigate Risks

Based on the EPA's "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA 1988b), the preliminary remedial action objectives (RAOs) for Group 1 will be to achieve the EPA's threshold criteria of "Overall Protection of Human Health and the Environment" and "Compliance with ARARs."

Using the results of the RI, explosives safety risk assessment, and potential ARARs, risk management alternatives will be developed and evaluated to support the intended land use.

The AOC indicates that the evaluation of alternatives should consider, at a minimum, the following:

- A no-action alternative
- An alternative that reduces or eliminates the hazard, toxicity, mobility, or volume of contaminants (including treatment)
- An alternative that considers land use controls
- An alternative that considers unrestricted use
- Consideration of innovative technologies

Based on RI/FSs previously developed by the Army for portions of the former Fort Ord, remedial alternatives would likely include one or more of the following:

- No further action
- Land use controls (e.g., administrative and engineering controls)
- Surface clearance
- MEC removal to depth, as required by future land use or other applicable standards
- Construction support
- MEC recognition training
- Combinations of the above

These potentially applicable response actions will be evaluated, screened, and developed into remedial alternatives that will be fully evaluated using the following criteria:

1. Overall protection of human health and the environment
2. Compliance with ARARs
3. Long-term effectiveness and permanence
4. Reduction in toxicity, mobility, or volume through treatment
5. Short-term effectiveness
6. Implementability

7. Cost
8. State (or support agency) acceptance
9. Community acceptance

4.10 Community Relations

Community relations activities for Group 1 are intended to keep communities informed of MEC-related activities at the former Fort Ord, and help supporting agencies respond to community concerns. Community relations activities for the ESCA RP are described in the Community Involvement and Outreach Program (CIOP) Plan (ESCA RP Team 2008b). The CIOP Plan also serves as an addendum to the Army's Community Relations Plan (CRP) Update No. 3 (Army 2006).

The CIOP Plan outlines communication techniques that will be used to keep the affected communities informed throughout the RI process at Group 1. Public participation activities, including fact sheets, public notices, and press releases, will be conducted in accordance with CERCLA.

The following sections summarize the approach outlined for community relations activities in the CIOP Plan that will be used during the RI process.

4.10.1 Community Involvement

The CIOP Plan summarizes the community profile surrounding the former Fort Ord as described in the CRP. The community is considered to consist of:

- residents both on the former Fort Ord and in nearby communities
- present business owners, employees, and students on the former Fort Ord property
- elected local representatives and public agencies
- environmental and special interest groups
- students, faculty, and staff at the CSUMB campus

Continuing community involvement will be achieved through a combination of communication, participation, and outreach to all affected stakeholders. To achieve this, FORA will use newsletters, community involvement workshops, fact sheets, project announcements, public notices, and website updates to provide information about the RI process. In addition, a dedicated phone line has been established for the FORA ESCA RP. Callers will be able to get project updates and leave messages regarding questions or comments.

4.10.2 Community Relations Strategy

Implementation of community relations for the RI will focus on providing information regarding the timeline, reporting, and scheduling of RI activities. As outlined in the CIOP Plan, several objectives for the CIOP apply to the RI. FORA will do the following:

- Provide timely and accurate FORA ESCA RP information
- Provide opportunities for the public to comment and provide input on technical documents
- Provide transparency in decision making and respect for all viewpoints
- Meet all regulatory requirements
- Address community concerns in a collaborative fashion

4.10.3 Implementation of Community Relations Activities

Specific community relations activities related to conducting the Group 1 RI include:

- Publish articles in the quarterly newsletter. Newsletters will be mailed to all interested parties in adjacent communities. Additional interested parties on the FORA ESCA RP mailing list will also receive the newsletters. The newsletters will also be posted on the FORA ESCA RP website (http://www.fora.org) and a link to newsletters will be provided on the Army's Fort Ord Cleanup website (www.fortordcleanup.com/community/factsheets.asp). FORA will work with representatives of CSUMB to ensure they are kept apprised of all ESCA-related cleanup activities and have access to relevant information about the ESCA RP. Information about the FORA ESCA RP website will be made available to representatives of CSUMB allowing them to notify their students, staff, and faculty as appropriate. Special emphasis will be placed on coordinating with the university concerning when field construction work will impact access routes, CSUMB cross country trails and other campus sponsored activities. FORA will also participate in CSUMB outreach activities, as appropriate.
- Hold public meetings as necessary to satisfy regulatory requirements.
- Provide briefings and/or updates at the quarterly Community Involvement Workshops. The Workshops are scheduled for the second Wednesday in January, April, July, and October.
- Provide updates at the Technical Review Committee (TRC) quarterly meetings. The TRC is composed of representatives of local agencies, city governments, and institutions as well as federal and state agencies with an interest in the cleanup.
- Publish a fact sheet distributed by direct mail to local residents, community leaders, minority community organizations, and those who have requested to be on the CIOP mailing list. Fact sheets will also be posted on the FORA ESCA RP website, on the Fort Ord Cleanup website, and at community involvement activities.

- Publish public notices in local newspapers, and provide press releases to the media announcing the availability of RI-related documents and opportunities for public comment.
- Respond to comments and inquiries from the community on the RI process or related documents.
- Provide copies of RI-related documents to the Army for inclusion in the Army-maintained Information Repositories and Administrative Record.

4.10.4 Roles of State and Local Authorities

State and local government cooperation has included regulatory agency involvement throughout the ESCA RP. FORA and its contractors continue to meet regularly with the regulatory agencies with respect to the ongoing munitions response activities.

4.10.5 Public Education

The Army conducts a public education program. The program includes general information related to the hazards associated with MEC and site-specific information on the history and current status of the property related to MEC. In addition, the USACE developed a school safety program.

4.11 Data Management

Data generated during implementation of the Group 1 RI/FS Work Plan will be managed according to established data management and quality procedures, as presented in Volume 2 of this work plan. New data will be included in the data validation, in terms of a completeness evaluation, identification of data gaps, and site boundary evaluation, as appropriate.

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5.0 GROUP 1 RI / FS TASKS

This section outlines standard RI/FS tasks that will be performed to make decisions regarding risk and remedial actions during the Group 1 RI/FS, as defined by the AOC. The AOC tasks presented below are consistent with those provided in the EPA's current RI/FS guidance document (EPA 1988b).

5.1 Task 1 Project Panning

Task 1 includes efforts related to initiating the project and scoping project activities. The majority of project planning will occur during the scoping phase of the Group 1 RI/FS and include both site planning and project planning. However, because of the iterative nature of the Group 1 RI/FS, the planning process will continue throughout the project. The initial project planning process is documented in the SEDR and this work plan.

5.2 Task 2 Community Relations

Task 2 includes the efforts related to the preparation and implementation of the CIOP Plan (ESCA RP Team 2008b). Community relations activities serve to keep stakeholders informed of activities at the Former Fort Ord and help the supporting agencies respond to community concerns. The MEC-related community relations programs implemented at the former Fort Ord have been described in the CRP (Army 1998), the CRP Update Number 1 (Army 2000), the CRP Update Number 2 (Army 2001) and the CRP Update Number 3 (Army 2006). The CIOP Plan is an addendum to the Army's former Fort Ord CRP.

5.3 Task 3 Field Investigation

Task 3 incorporates efforts related to fieldwork undertaken to fill identified data gaps, in order to complete the remedial investigation at Group 1 in accordance with Task 4.1 of the AOC. Section 4.5 of this work plan presents the investigation approach for the fieldwork to be performed during the RI. The SAP will present the scope of specific activities for the fieldwork, and the QAPP will detail the procedures to be followed when carrying out the field activities. The SAP and the QAPP are presented in Volume 2 of this Group 1 RI/FS Work Plan.

5.4 Anticipated Penetration Depths

The majority of the MEC recovered from the Parker Flats MRA Phase II was identified as surface-related munitions (signal flares, grenades, and simulators) used for troop maneuvers, and all of the MEC were recovered from depths of less than 2 feet, except for the MEC items recovered from burial pits.

5.5 Task 5 Data Evaluation

Task 5 includes refining and updating the CSMs for Group 1 to document additional site characterization results, including physical characteristics, MEC source characteristics, and the nature and extent of contamination in accordance with Task 4.1 of the AOC. The results of this task will be presented to state and federal regulators and the Army during regularly scheduled monthly meetings prior to proceeding to the risk assessment. Community stakeholders will be apprised of any changes to the CSM and their potential impacts by way of the most appropriate and timely method (e.g., Community Involvement Workshop meeting, ESCA Community meeting, ESCA newsletter, and/or ESCA Fact Sheet).

5.6 Task 6 Risk Assessment

Task 6 includes efforts related to assessing risks to human health and the environment in accordance with Task 4.2 of the AOC. In general, the objectives of a baseline risk assessment or risk evaluation will be attained by identifying and characterizing the following:

- Potential human and environmental receptors
- Potential exposure routes and extent of actual or expected exposure
- Extent and likelihood of expected impact or threat
- Level of uncertainty associated with the above items

The main purpose of the risk evaluation portion of the Group 1 RI/FS is to provide an estimate of the risks posed by site conditions (i.e., MEC) and to assess whether a past (or planned) removal or remedial action at a site was (or will be) effective in reducing those risks. The results of this task will be presented to community stakeholders at a community meeting on the Draft RI/FS report.

5.7 Task 7 Treatability Studies

Task 7 includes efforts to plan and conduct pilot, bench, or other treatability studies. Treatability studies are conducted primarily to achieve the following:

- Provide sufficient data to allow treatment alternatives to be fully developed and evaluated during the detailed analysis and to support the remedial design of a selected alternative
- Reduce cost and performance uncertainties for treatment alternatives to acceptable levels so that a remedy can be selected

Sufficient information is available to allow screening and evaluation of potentially applicable remedial actions (Section 4.7); therefore, treatability studies are not required.

5.8 Task 8 Remedial Investigation Reports

Task 8 consists of efforts related to the preparation of the RI findings, once the data have been evaluated. The task includes all draft and final RI reports, as well as task management and QC. The results of the baseline risk assessment will be presented to stakeholders prior to proceeding to the development of screening alternatives.

5.9 Tasks 9, 10, and 11 Feasibility Study

Tasks 9, 10, and 11 described below will comprise the FS activities. The FS will be completed using information from the evaluation of munitions response activities. The FS will be conducted in accordance with the EPA's RI/FS guidance document (EPA 1988b) and will use site-specific data to screen, evaluate, and recommend remedial alternatives and long-term risk management measures.

5.9.1 Task 9 Remedial Alternatives Screening

Remedial alternatives screening will be based on the identification of preliminary remediation goals (PRGs) and RAOs in accordance with Task 4.3 of the AOC.

PRGs and RAOs include potential statutory and regulatory requirements, such as ARARs, guidance and advisories (TBCs), and risk-based concentrations of chemicals in environmental media that have been brought forward from the risk assessment. Candidate PRGs will be developed during the RI and presented in the FS and ROD. In addition, the National Contingency Plan specifies that RAOs be developed that address: (1) contaminants of concern, (2) media of concern, (3) potential exposure pathways, and (4) remediation goals (40 CFR 300.430(e)(2)(i)).

Numerical cleanup standards are not available for munitions response actions. Therefore, the PRGs for MEC on the surface and in subsurface soil are developed to address MEC using the most appropriate technologies, to ensure protection of the public consistent with the proposed end use of the property. Chemical-specific (i.e., specific to MEC) ARARs, if any, and the Fort Ord Base Reuse Plan will be considered as PRGs.

The Group 1 RI/FS will contain a discussion of the substantive requirements that will be considered as potential ARARs and TBCs identified for munitions response, gathered from state and federal sources. The Superfund Amendments and Reauthorization Act of 1986 requires that cleanup alternatives consider and attain ARARs, which are promulgated under federal or state law. ARARs are designed to be protective of human health and the environment and to be technically achievable with existing remedial techniques.

Based on the EPA's "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA 1988b), the preliminary RAOs for Group 1 will be to achieve the EPA's threshold criteria of "Overall Protection of Human Health and the Environment" and "Compliance with ARARs."

These are considered as PRGs. The final acceptable exposure levels will be determined as part of the FS, on the basis of the results of the risk assessment and the evaluation of the expected exposures and associated risks for each alternative, as discussed in Section 5.9.2.2 of this work plan.

5.9.2 Task 10 Remedial Alternatives Evaluation

The evaluation of remedial alternatives will include the development of alternatives, refinement and documentation of RAOs, identification of potential ARARs, development of general response actions, and a detailed analysis of each alternative as described in the following sections of this work plan.

5.9.2.1 Development of Alternatives

During the FS, remedial technologies and their associated implementation, containment, treatment, or disposal requirements will be identified, pre-screened, and then combined into alternatives in accordance with Task 5.1 of the AOC. Information obtained during the RI is considered in developing the list of alternatives for evaluation during the FS. Some technologies, implementation, or property use restrictions may become apparent during this step, or may become necessary regardless of which remedy is selected. Evaluation of alternatives should consider, at a minimum, the following:

- A no-action alternative
- An alternative that reduces or eliminates the hazard, toxicity, mobility, or volume of contaminants (including treatment)
- An alternative that considers land use controls
- An alternative that considers unrestricted use
- Consideration of innovative technologies

For any evaluation of response alternatives where a land use control will be imposed, either as a stand-alone response alternative or as one component of a more complex alternative, the evaluation of response alternatives will include the following:

- An analysis of alternative(s) utilizing a land use control
- An analysis at the level of detail appropriate to the size and scope of a response, of alternatives not requiring a land use control (e.g., implementation of a response that allows unrestricted use)

This will allow consideration of restricted and unrestricted use alternatives in selecting the response action.

For any alternative proposed that includes the use of a land use control, sufficient detail and analysis of the likely control mechanisms that would be used to achieve the objectives will be included in the FS to enable a determination of the long-term effectiveness and reliability of

such control mechanisms. Additionally, cost estimates for the establishment, implementation, monitoring, and reporting of the land use controls will be included in the cost estimates for each alternative that includes such controls.

5.9.2.2 Refine and Document RAOs

Based on the explosives safety risk assessment and the results of the RI, site-specific RAOs will be reviewed and modified, if necessary, in accordance with Task 5.2 of the AOC. The modified RAOs will be documented in a technical memorandum, prior to the completion of the FS, which will be reviewed and approved by the EPA, after consultation with the DTSC. These modified RAOs will specify the contaminants and media of interest, exposure pathways and receptors, hazards, and an acceptable contaminant level or range of levels (at particular locations for each exposure route).

5.9.2.3 Identification of Potential ARARs

ARARs, in conjunction with risk-based levels developed in the risk assessment, will be employed in directing response actions and establishing cleanup goals in accordance with Task 5.3 of the AOC. ARARs are used as a "starting point" in determining the protectiveness of a site remedy. Additional guidance on ARARs is found in EPA/540/G-89/006 (EPA 1988a). An initial list of potential ARARs is provided in Table 1 and is based on Army decisions regarding munitions response actions for the former Fort Ord (Section 4.8).

5.9.2.4 Develop General Response Actions

General response actions will be developed for each parcel defining implementation, containment, removal, or other actions, singly or in combination, as appropriate to satisfy the RAOs in accordance with Task 5.4 of the AOC.

5.9.2.5 Detailed Analysis of Alternatives

A detailed analysis of potential alternatives will be developed, which will consist of an evaluation of each option against the nine CERCLA evaluation criteria and a comparative analysis of all options using the same evaluation criteria in accordance with Task 5.5 of the AOC. The nine CERCLA evaluation criteria will be applied to the assembled remedial alternatives to ensure that the preferred remedial alternative(s) will be protective of human health and the environment; will be in compliance with, or include a waiver of, ARARs; will be cost-effective; will utilize permanent solutions and alternative treatment technologies, or resource recovery technologies, to the maximum extent practicable; and will address the statutory preference for treatment as a principal element. The evaluation criteria will include:

1. Overall protection of human health and the environment
2. Compliance with ARARs
3. Long-term effectiveness and permanence

4. Reduction in toxicity, mobility, or volume through treatment
5. Short-term effectiveness
6. Implementability
7. Cost
8. State (or support agency) acceptance
9. Community acceptance

(Note: Criteria 8 and 9 are considered after the Group 1 RI/FS report has been released to the general public and after the Proposed Plan public comment period.)

The results of the detailed analysis of remedial alternatives will become a major factor in selecting a preferred alternative, after completion of the Group 1 RI/FS. The detailed analysis will include:

- A description of each alternative that outlines the strategy involved and identifies the key ARARs associated with each alternative
- A discussion of the assessment of each alternative against each of the nine CERCLA criteria

A preliminary assessment of Criteria 8 and 9 may be provided at this time, as appropriate, or these will be addressed following the public comment period

5.9.3 Task 11 Feasibility Study Reports

The collection and evaluation of new data, as well as the results of the evaluation of previous work, in conjunction with the risk evaluation and FS described above, will serve as the RI/FS for Group 1. Pertinent information that will be documented in the RI/FS report is as follows:

- Summary of the work performed as part of the evaluation of previous munitions response activities
- Data collected during the RI
- Results of the evaluation of previous work and planned RI work
- Conclusions regarding the usability of the data
- Evaluation of explosives safety risks
- FS
- Recommended alternatives
- Long-term explosives safety risk management measures

6.0 REPORTING AND SCHEDULE

This section provides the general outline of the RI/FS report and anticipated schedule for implementation and completion of the Group 1 RI/FS Work Plan.

6.1 Reporting

The Group 1 RI/FS report will generally be organized as follows:

Volume 1 – Remedial Investigation

This volume provides the results of the Group 1 RI and will likely include the following components:

- **Section 1 – Introduction.** This section will provide the purpose of the report and background information on the Army's MMRP and the FORA ESCA RP.
- **Section 2 – Background.** This section will present the Fort Ord military munitions-related history, physical setting, and background information on the base-wide Munitions Response RI/FS.
- **Section 3 – Group 1 Remedial Investigation.** This section will provide the RI for Group 1 (Seaside MRA and Phase II of the Parker Flats MRA), to include background, updates to the CSMs, and the results and evaluation of munitions response activities.
- **Section 4 – References.** This section will provide a list of references for pertinent documents cited in the report.

Volume 2 – Explosives Safety Risk Assessment

This volume provides the results of the Group 1 explosives safety risk assessment, which describes the qualitative and quantitative factors potentially resulting in a receptor encountering an MEC item. The risk assessment is then used to develop and evaluate remedial alternatives during the FS. The Group 1 risk assessment will likely include the following components:

- **Section 1 – Introduction.** This section will provide the purpose and objectives of the risk assessment.
- **Section 2 – Data and Data Usability.** This section will provide an evaluation of the data and data usability to support a risk assessment.
- **Section 3 – Receptors and Reuse Areas.** This section will identify the selected receptors for the various reuse areas of the Group 1 MRAs.
- **Section 4 – Risk Assessment Results.** This section will describe the assumptions and results of risk analysis for each of the reuse areas in the Group 1 MRAs.

- **Section 5 – Uncertainty.** This section will describe the uncertainties related to the data, input components, and future land use and associated receptors.
- **Section 6 – Conclusions.** This section will present a summary of the risk assessment results and the conclusions.
- **Section 7 – References.** This section will provide a list of references for pertinent documents cited in the report.

Volume 3 – Feasibility Study

This volume provides the results of the Group 1 FS that identifies and selects preferred remedial alternatives to address potential after-action MEC risks. It presents the RAOs, identification of alternatives, screening of alternatives, and selection of alternatives. The FS also describes the proposed plan and ROD process. The Group 1 FS will likely include the following components:

- **Section 1 – Introduction.** This section will describe the purpose and objectives of the FS and present background information on the Group 1 RI/FS process.
- **Section 2 – Remedial Approach.** This section will define the reuse areas for which remedial alternatives will be developed, and will describe the RAOs, application of risk assessment results, ARARs, land use control guidelines that will be applied in the development of remedial alternatives, and ongoing and future MEC-related activities at the former Fort Ord that are components of the Army's base-wide efforts to promote MEC safety.
- **Section 3 – Identification of Applicable Response Actions.** This section will identify the range of applicable response actions for MEC risk management at the Group 1 MRAs, such as no further action, land use controls, and additional MEC remediation.
- **Section 4 – Development of Remedial Alternatives.** This section will present long-term management measures specific to implementation and management of the remedial alternatives selected for Group 1, and will also include a screening of response action components, development of remedial alternatives, and identification of potential ARARs associated with implementation.
- **Section 5 – Evaluation and Comparison of Remedial Alternatives.** This section will present an evaluation and comparison of potential remedial alternatives for each of the reuse areas in the Group 1 MRAs.
- **Section 6 – Identification of the Preferred Remedial Alternative.** This section will present and summarize the preferred remedial alternative for each reuse area.
- **Section 7 – Approval Process.** This section will describe the approval process for documenting the preferred alternatives for implementation at each of the Group 1 reuse areas in the RI/FS Proposed Plan and ROD.
- **Section 8 – References.** This section will provide a list of references for pertinent documents cited in the report.

6.2 Schedule

An anticipated project schedule has been prepared that identifies the key components of the work in chronological order, including document deliverables and important project milestones. The anticipated project schedule is presented in Appendix D. For planning and reporting purposes, regulatory review periods are included, but are subject to change based on the level of effort required to incorporate review comments and review period extension requests. A summary of project milestones and associated dates from the anticipated schedule is provided in Table 2.

The associated tasks and project progress will be tracked monthly on the schedule to show actual project status compared to the initial project schedule in order to better evaluate the reasons for progress variances and to identify overall impact to project duration.

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7.0 REFERENCES

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Table 1
Potential Applicable or Relevant and Appropriate Requirements (ARARs)

Source or Authority	Requirement, Standard, or Criterion	Type	Description	Remarks
Federal ARARs				
Endangered Species Act (16 U.S.C. §§ 1531-1543)	16 U.S.C. § 1536 (a) and (c); 16 U.S.C. § 1538 (a)(1)	Applicable [1, 2, 3] / Location	Federal agencies are required under Section 7 of the ESA to ensure that their actions do not jeopardize the continued existence of a listed species or result in destruction of or adverse modification of its critical habitat (16 U.S.C. § 1536). If the proposed action may affect the listed species or its critical habitat, consultation with the United States Fish and Wildlife Service (USFWS) and/or California Department of Fish and Game (CDFG) may be required (50 CFR § 402.14). Additionally, Section 9 of the ESA prohibits the illegal taking of a listed species (16 U.S.C. § 1538(a)(1)).	Endangered plant and animal species and critical habitats occur at the former Fort Ord. Each reuse area will be screened for potential impacts to any endangered species identified in the Installation-Wide Multispecies Habitat Management Plan (HMP; USACE 1997) and additional requirements identified in subsequent documents (USFWS 1999, 2002, and 2005; and Zander 2002). The provisions of the HMP and referenced additional requirements satisfy the requirements of the ESA.
Migratory Bird Treaty Act (MBTA)	16 U.S.C. §§ 703-712	Applicable [1, 2, 3] / Location	The statute sections prohibit the taking, possession of, buying, selling, purchasing, or bartering of any migratory bird, including feathers or other parts, nest eggs, or products, except as allowed by regulations.	The requirement includes specific standards of control.
Hazardous Materials & Transportation Act	49 CFR Part 172.101	Applicable [3] / Chemical and Action	These regulations impose procedures and controls on the transportation of hazardous materials.	The regulations include specific standards of control and substantive requirements, criteria, and limitations that may apply to the transport of detonation materials and selected recyclable ordnance materials.
Federal Resource Conservation and Recovery Act (RCRA), Subpart M (Military Munitions Rule [“the Military Munitions Rule”])	40 CFR Parts 266 and 270	Relevant and Appropriate [2, 3] / Chemical and Action	The regulations identify when military munitions on active ranges become subject to the regulatory definition of “solid waste,” for purposes of RCRA Subtitle C and, if these wastes are hazardous, the management standards that apply.	Portions of the Military Munitions Rule may be relevant and appropriate, but those provisions of the Rule that exclude military munitions from RCRA Subtitle C regulations are not appropriate to the remediation of a closed range. The relevant portions relate to the management of MEC, which is recovered, including characterization as hazardous waste and requirements for treatment, storage, and transportation. The Rule provides for the storage and transportation of recovered military munitions in accordance with Department of Defense Explosives Safety Board (DDESB) standards.
State of California ARARs				
California Endangered Species Act	Fish and Game Code §§ 2051 et seq. and §2080	Relevant and Appropriate [1, 2, 3] / Location	The statute sections provide a declaration of policy and definitions. Section 2080 provides that no person shall take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the commission determines to be an endangered species or a threatened species, or attempt any of those acts.	Section 2080 includes specific standards of control with respect to the taking of endangered or threatened species. Under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the ESCA RP Team is not required to comply with non-substantive, procedural, and administrative provisions of § 2051.
California Fish and Game Code	§ 3511	Relevant and Appropriate [1, 2, 3] / Location	This statute section prohibits taking or possessing fully protected birds or parts thereof, listed as: (a) American peregrine falcon *(Falco peregrinus anatum)*; (b) Brown pelican; (c) California black rail *(Lateralhus jamaicensis coturniculus)*; (d) California clapper rail *(Rallus longirostris obsoletus)*; (e) California condor *(Gymnogyps californianus)*; (f) California least tern *(Sterna albifrons browni)*; (g) Golden eagle; (h) Greater sandhill crane *(Grus canadensis tabida)*; (i) Light-footed clapper rail *(Rallus longirostris levipes)*; (j) Southern bald eagle *(Haliaeetus leucocephalus leucocephalus)*; (k) Trumpeter swan *(Cygnus buccinator)*; (l) White-tailed kite *(Elanus leucurus)*; and (m) Yuma clapper rail *(Rallus longirostris yumanensis)*.	The requirement includes specific standards of control that may apply to the American peregrine falcon (some possibility), golden eagle (slight possibility), brown pelican (not likely but possible), and California least tern (not likely but possible).
California Fish and Game Code	§ 3513	Relevant and Appropriate [1, 2, 3] / Location	This statute section declares that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA or any part of such migratory non-game bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.	The requirement includes specific standards of control.

Table 1
Potential Applicable or Relevant and Appropriate Requirements (ARARs)

Source or Authority	Requirement, Standard, or Criterion	Type	Description	Remarks
California Fish and Game Code	§ 3503.5	Relevant and Appropriate [1, 2, 3] / Location	This statute section prohibits the take, possession, or destruction of any birds in the orders of Falconiformes or Strigiformes, or to take, possess, or destroy the nest or eggs of any such bird, except as provided in the code.	The requirement includes specific standards of control that may apply to vultures, hawks, ospreys, falcons, and owls.
California Fish and Game Code	Title 14, CCR § 472	Relevant and Appropriate [1, 2, 3] / Location	This regulation limits the taking of non-game birds and mammals except for specified species.	The requirement includes specific standards of control that may affect American crows.
California Fish and Game Code	§ 4800 et seq.	Relevant and Appropriate [1, 2, 3] / Location	This statute section declares that it is unlawful to take, injure, possess, transport, or sell any mountain lion.	The requirement includes specific standards of control. Due to the size of vegetation clearance and MEC remediation activities that may be selected for implementation, it is unlikely that mountain lions will be negatively affected.
California Fish and Game Code	Title 14, CCR §§ 40-42	Relevant and Appropriate [1, 2, 3] / Location	These regulations make it unlawful to take, possess, purchase, propagate, sell, transport, import, or export any native reptile or amphibian, unless under special permit.	The requirement includes specific standards of control that may apply to California black legless lizard and coast horned lizard.
California Health and Safety Code, Division 20	Title 22, CCR Division 4.5	Applicable [3] / Chemical and Action	The statute and regulations provide for identification of hazardous waste in §§ 66261. If a material is a hazardous waste, Division 4.5 provisions further regulate hazardous waste generators, transporters, and treatment, storage, and disposal facilities.	The ESCA RP Team will evaluate discovered items in accordance with the approved work plan to determine the presence of energetic materials or other constituents that would cause it to be characterized as a hazardous waste. Substantive requirements: • Storage: on-site storage of MEC items occur in a designated bunker that meets the standard of DDESB 6055.9 STD, including security measures such as fences, signs, and an alarm system. • Transportation: off-site transportation of materials will incorporate applicable manifesting and placarding requirements. Conforms to Defense Reutilization and Marketing Office (DRMO) instruction. • Disposal/recycling: off-site disposal or recycling facility or facilities will be state and/or RCRA-authorized.
California Health and Safety Code	Title 22, CCR § 66264.601-603	Relevant and Appropriate [2] / Action	These regulations apply to hazardous waste treatment, which is conducted in a device that does not meet the definition of a “container” in 22 CCR § 66260.10 or is characterized as a “Miscellaneous Unit” subject to the provisions of 22 CCR § 66264.601-603. For activities where detonations are in a device that meets the 22 CCR § 66260.10 definition of a container, the requirements for “temporary units,” as set forth in 22 CCR § 66264.553, apply.	The regulations include generally described narrative standards. Compliance with substantive requirements is achieved through regulatory coordination of site-specific work plans in accordance with CERCLA and Federal Facility Agreement. Under CERCLA, the ESCA RP Team is not required to comply with procedural requirements such as obtaining a permit.

Table 1
Potential Applicable or Relevant and Appropriate Requirements (ARARs)

Source or Authority	Requirement, Standard, or Criterion	Type	Description	Remarks
California Health and Safety Code	Title 22, CCR § 66265.382	Relevant and Appropriate [3] / Chemical and Action	Open burning of hazardous waste is prohibited except for the open burning and detonation (OB/OD) of waste explosives. Waste explosives include waste that has the potential to detonate and bulk military propellants that cannot safely be disposed of through other modes of treatment. Detonation is an explosion in which chemical transformation passes through the material faster than the speed of sound (0.33 kilometer/second at sea level). Owners or operators choosing to open burn or detonate waste explosives shall do so in accordance with the following table and in a manner that does not threaten human health or the environment. Pounds Waste Explosives — Minimum Distance from OB/OD to property 0 to 100 — 204 meters (670 feet) 101 to 1,000 — 380 meters (1,250 feet) 1,001 to 10,000 — 530 meters (1,730 feet) 10,001 to 30,000 — 690 meters (2,260 feet)	The requirement includes specific standards of control and addresses situations similar to those that may be addressed during MEC remediation; detonation of MEC will comply with these requirements.
California Fish and Game Code	§ 1900 et seq.	Relevant and Appropriate [1, 2, 3] / Action	These statute sections sets forth programmatic and administrative provisions and, in § 1908, provides that no person shall import into the state, or take, possess, or sell within this state, except as incident to the possession or sale of the real property on which the plant is growing, any native plant, or any part or product thereof, that the commission determines to be an endangered native plant or rare native plant.	Although the definition of “person” in the statute does not apply to the ESCA RP Team, the standards of control are relevant and appropriate, and the citation is therefore considered as an ARAR.
California Fish and Game Code	Title 14, CCR § 783 et seq.	Relevant and Appropriate [1, 2, 3] / Action	These regulations provide that no person shall import into the State, export out of the State or take, possess, purchase, or sell within the State, any endangered species, threatened species, or part or product thereof, or attempt any of those acts, except as otherwise provided in the California Endangered Species Act, Fish and Game Code Section 2050, et seq., the Native Plant Protection Act, the Natural Community Conservation Planning Act, the California Desert Native Plants Act, or as authorized under this article in an incidental take permits. The regulations also provide programmatic and administrative procedures for incidental take permits.	The section includes specific standards of control with respect to taking rare or endangered plants. Although the definition of “person” in the statute does not apply to the ESCA RP Team, the standards of control arc relevant and appropriate, and the citation is therefore considered as an ARAR.
State of California To-Be-Considered Criteria (TBCs)				
California Fish and Game Commission	Wetlands Resources (pursuant to § 703 of California Fish and Game Code; not a statute)	Policy [1, 2, 3] / Location	This policy: (1) seeks to provide for the protection, preservation, restoration, enhancement, and expansion of wetland habitat in California; (2) strongly discourages development in or conversion of wetlands; and (3) opposes, consistent with its legal authority, any development or conversion that would result in a reduction of wetland acreage or wetland habitat values. To that end, the Commission: (1) opposes wetland development proposals unless, at a minimum, project mitigation assures there will be “no net loss” of either wetland habitat values or acreage; and (2) strongly prefers mitigation that would achieve expansion of wetland acreage and enhancement of wetland habitat values.	The policy provides for the protection of wetland resources.

Table 1
Potential Applicable or Relevant and Appropriate Requirements (ARARs)

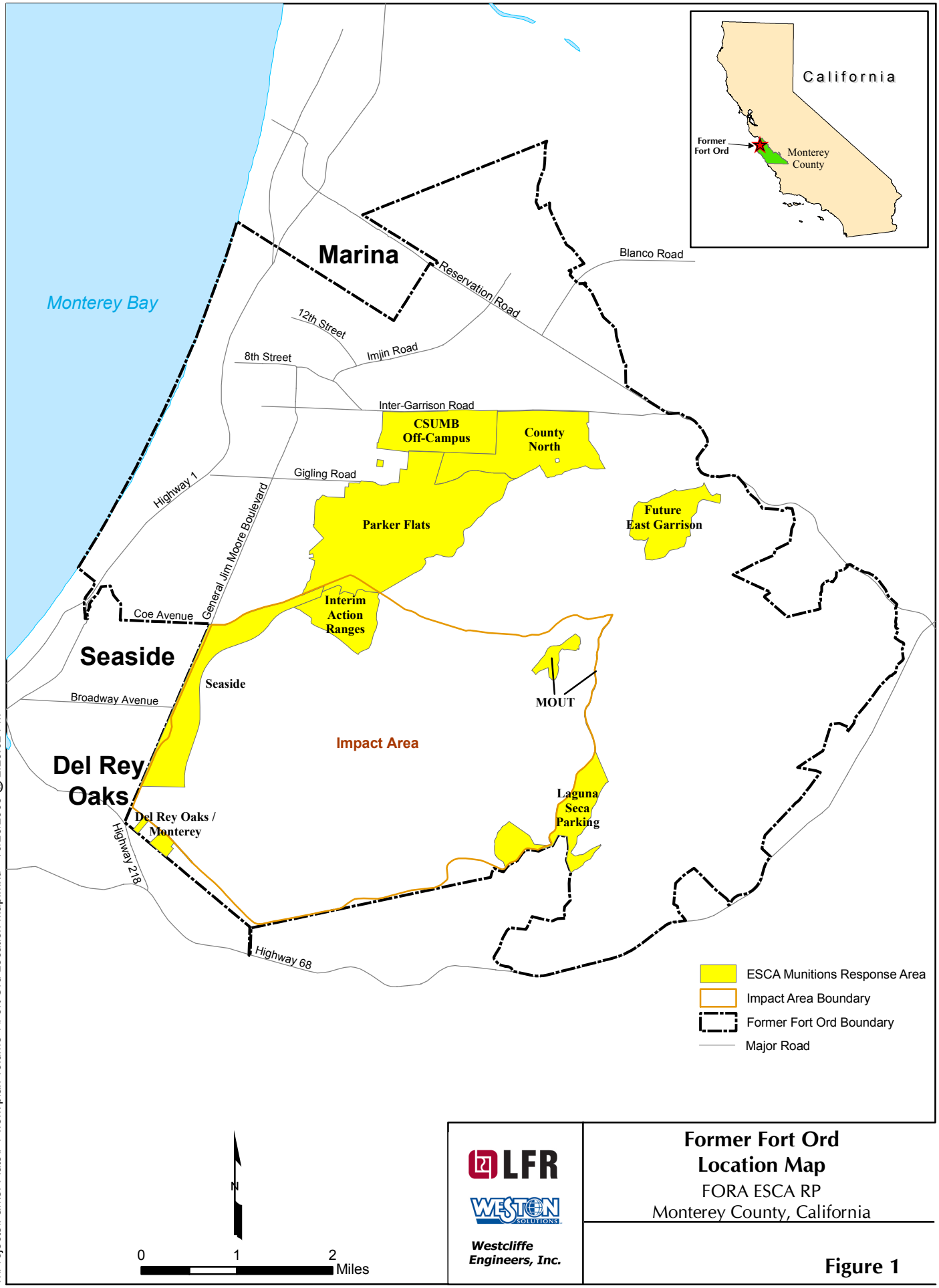
Source or Authority	Requirement, Standard, or Criterion	Type	Description	Remarks
Regulations that were considered as Potential ARARs but were not considered applicable				
California Fish and Game Code	§ 3005		The statute section prohibits the taking of birds or mammals, except non-game mammals, with any net, pound, cage, trap, set line, or wire, or poisonous substance. Included in the term "taking" is the killing of birds or mammals by poison.	Birds and mammals will be protected by achieving the identified Remedial Action Objectives (RAOs). Further, the scope of the remedial actions does not include intentional taking of birds and mammals with unlawful devices.
California Fish and Game Code	§ 4000 et seq.		This statute section provides that a fur-bearing mammal may be taken only with a trap, firearm, bow and arrow, poison under a proper permit, or with the use of dogs.	The scope of the remedial actions does not involve intentional taking of fur-bearing mammals with unlawful devices.
California Fish and Game Code	Title 14, CCR § 460		This regulation makes it unlawful to take Fisher, marten, river otter, desert kit fox and red fox.	The remedial actions will not result in the take of Fisher, marten, river otter, desert kit fox, and red fox. The species of red fox protected by the State is located in the Sierra Nevada mountain range. The species of red fox located at the former Fort Ord is an introduced species and is not protected by this section.
California Clean Air Act	Health and Safety Code § 41701		This statute section prohibits the discharge into the atmosphere from any source whatsoever any air contaminant for a period or periods aggregated more than three minutes in any one hour that is dark or darker than No. 2 on the Ringelmann Chart or obscures the view to a degree equal to or greater than smoke.	Agricultural burning for which a permit has been granted pursuant to Article 3 (commencing with § 41850, emission limitations for agricultural burning) are exempt from this requirement per § 41704(b). Any prescribed bums that would be conducted for vegetation removal prior to MEC remediation will be conducted under Monterey Bay Unified Air Pollution Control District Rule 407, which implements the requirements of Article 3 (California Health and Safety Code § 41850 et seq.). The exemption applies although the ESCA RP Team is not required to obtain a permit under CERCLA.

Notes:
1. Vegetation Clearance
2. MEC Remediation
3. Detonation of MEC

Table 2
Project Schedule Milestones and Anticipated Completion Dates

MRA Group	Draft Document Name	Submittal Date	AOC Requirement
Group 1 (Seaside MRA and Parker Flats MRA Phase II)	Draft Remedial Investigation / Feasibility Study Work Plan (RI/FS WP)	**28-May-08**	Due within 60 days of approval of SEDR
	Remedial Investigation Fieldwork	*Oct-08 through Jun-09*	*Not Applicable*
	Draft Remedial Investigation / Feasibility Study Report (RI/FS Report)	31-Jul-09 *	RI Report due 180 days after completion of RI fieldwork. FS Report due 120 days after the approval of RI Report.
	* Proposed milestone target date based on scheduled completion of RI/FS Report within 60 days of completion of remedial investigation fieldwork.		
	Draft Proposed Plan (PP)	*21-Jan-10*	*Not Applicable*
	Draft Record of Decision (ROD)	*22-Jun-10*	*Not Applicable*
	Draft Institutional Controls Implementation Plan (IC Plan) [1]	04-Jan-11	Due 90 days after signature of the ROD
	Draft Operations and Maintenance Plan (O&M Plan) [1]	04-Jan-11	Due 90 days after signature of ROD
	Pre-certification Inspection [2]	TBD	Due within 90 days after Respondent concludes that the Remedial Action has been fully performed and the Performance Standards have been attained.
	Draft Remedial Action Completion Report (RACR) [2]	TBD	Due within 30 days after the pre-certification inspection, if appropriate.

Notes:
[1] Schedule dependent upon approval of ROD.
[2] If NFA ROD is approved, the Pre-certification Inspection and RACR will not be required.
AOC = Administrative Order on Consent
TBD = To be determined
Bold = 2008 milestone schedule
Non-Bold – Target dates for out years
Italics = Not a required compliance milestone under the AOC



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Former Fort Ord Location Map

FORA ESCA RP
Monterey County, California

Figure 1

CSUMB Off-Campus MRA

County North MRA

Parker Flats MRA

Future East Garrison MRA

Interim Action Ranges MRA

Seaside MRA

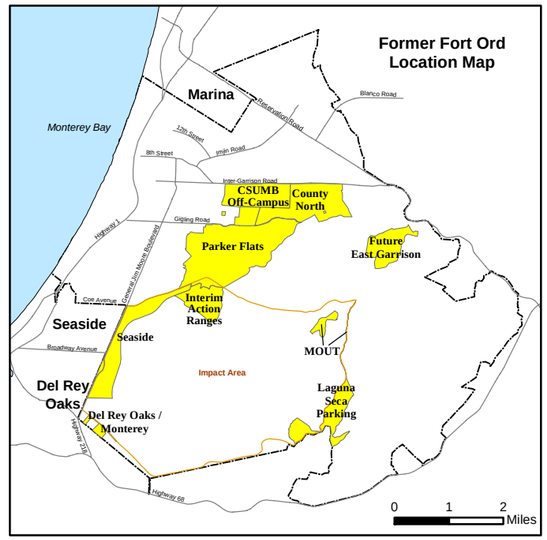
MOUT Site MRA

Laguna Seca Parking MRA

Del Rey Oaks/ Monterey MRA

Legend

- Group 1 MRAs
- Group 2 MRAs
- Group 3 MRAs
- Group 4 MRA
- Former Fort Ord Boundary



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Munitions Response Area Groups

FORA ECSA RP
Monterey County, California

Figure 2

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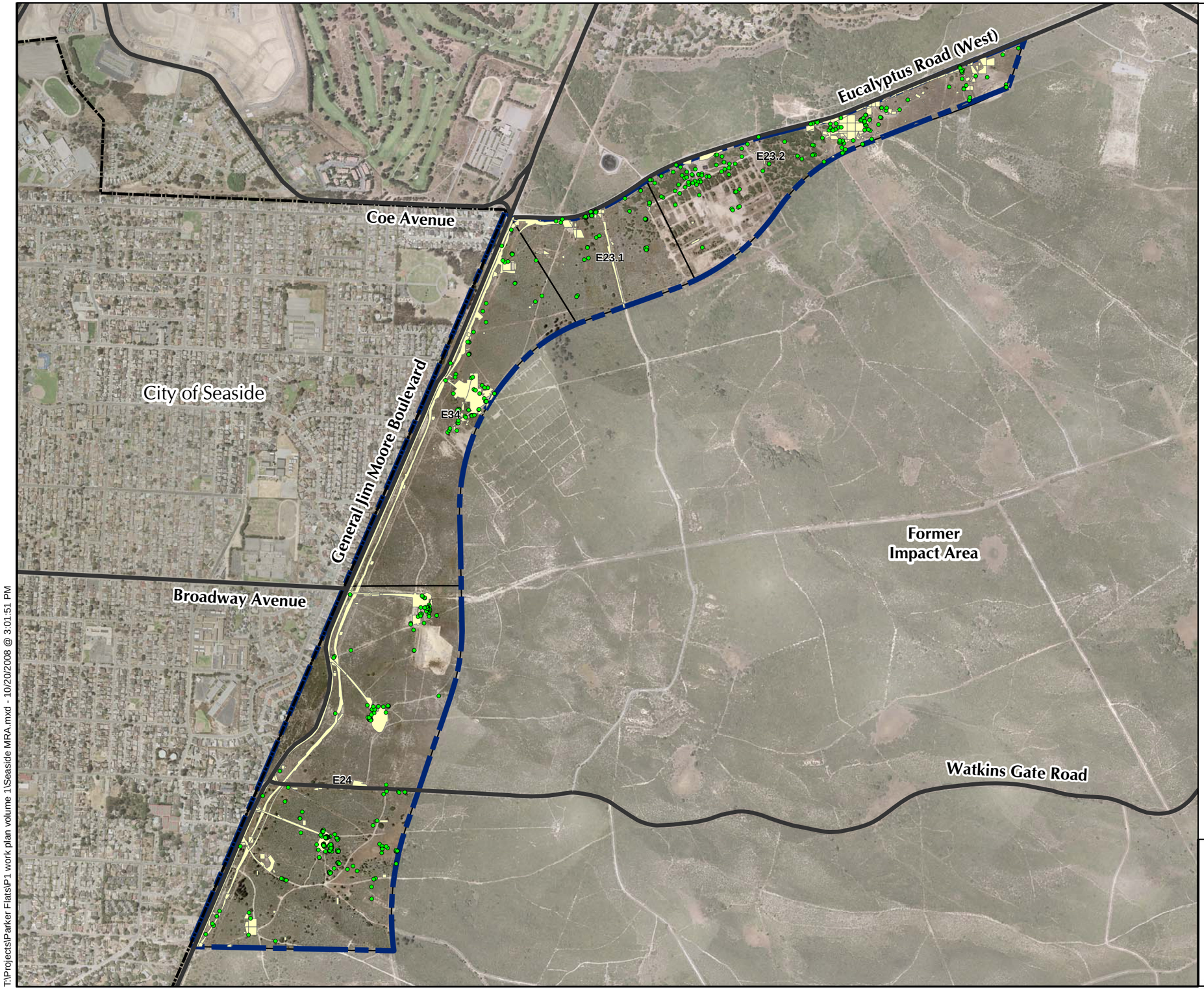
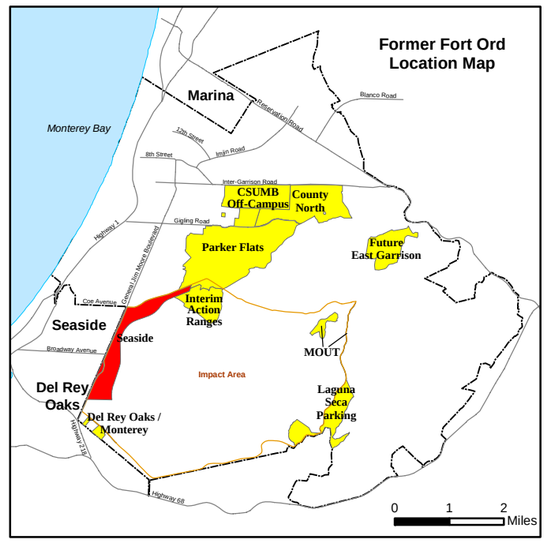
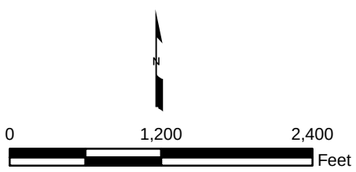


Legend

- Seaside MRA
- Major Road
- E23.1 — USACE Parcel
- Special Case Area Point
- Special Case Area





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Seaside MRA

FORA ESCA RP
Monterey County, California

Figure 3

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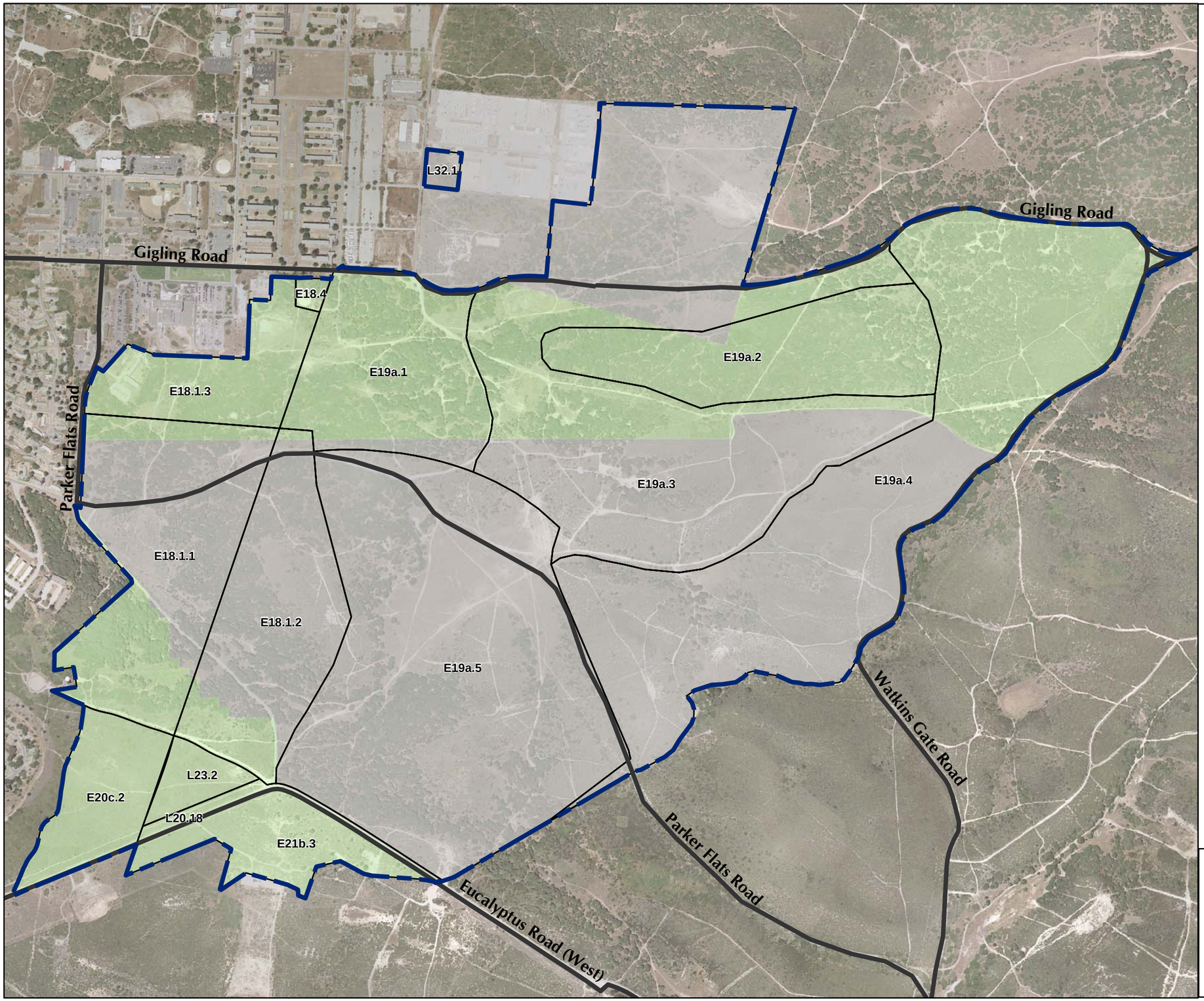
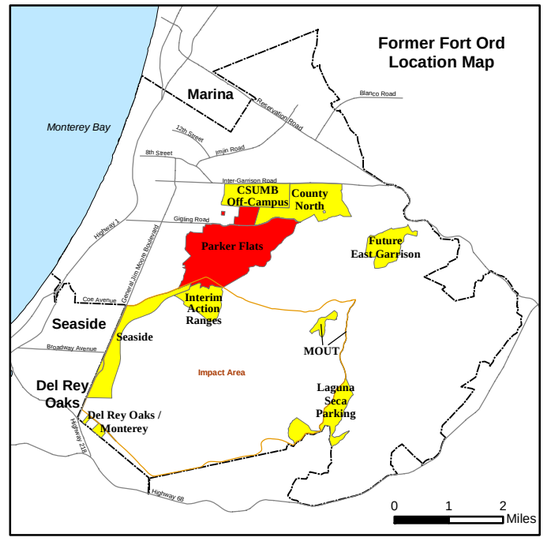
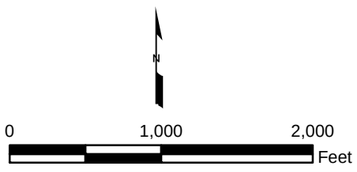


Legend

- Parker Flats MRA
- Major Road
- E23.1 USACE Parcel
- Phase I Remedial Investigation Area
- Phase II Remedial Investigation Area





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Parker Flats MRA
Phase I and Phase II Areas

FORA ESCA RP
Monterey County, California

Figure 4

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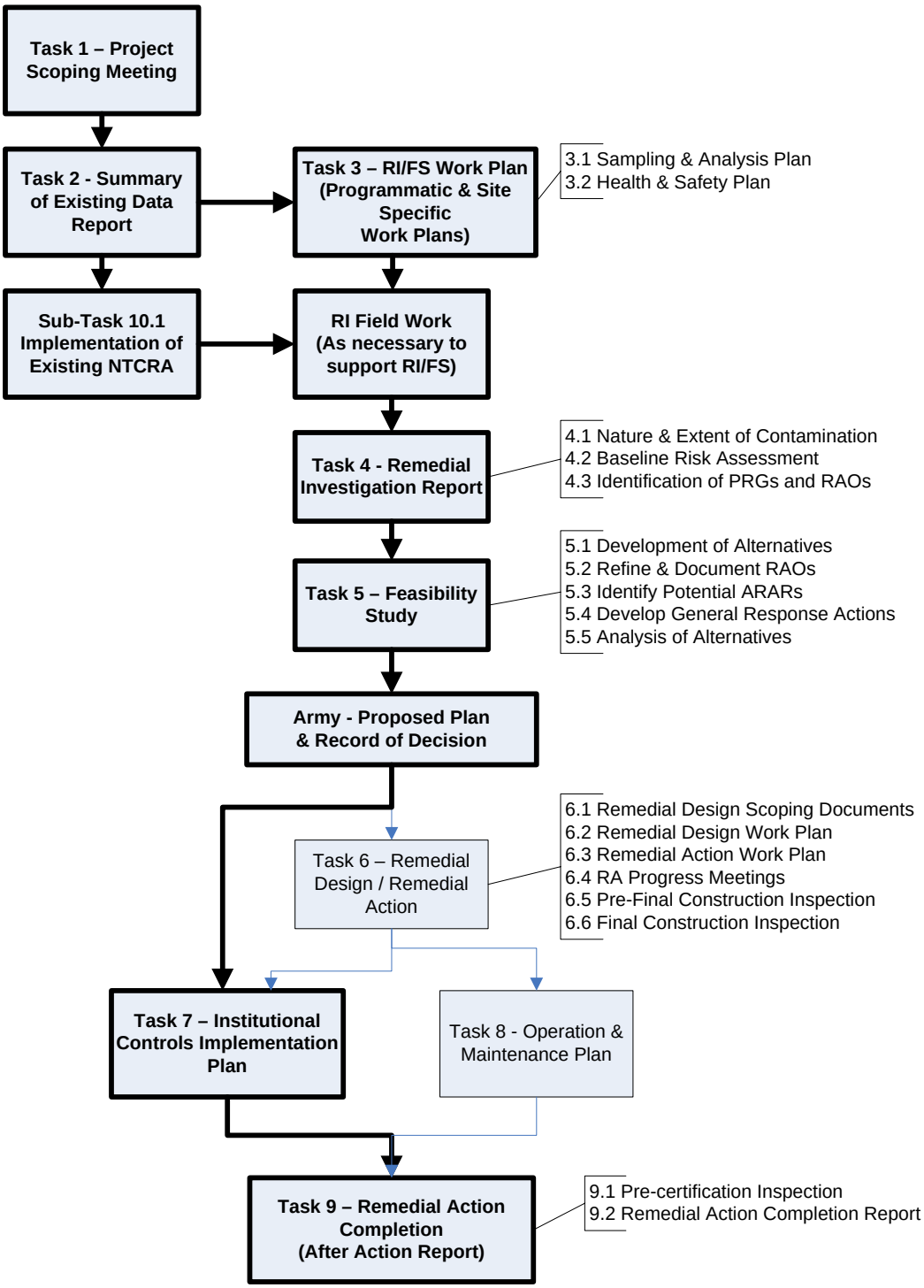

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Regulatory Pathway to Closure Group 1

FORA ESCA RP
Monterey County, California

Figure 5

APPENDIX A

Seaside MRA Conceptual Site Model

4.0 SEASIDE MRA CONCEPTUAL SITE MODEL

The Seaside MRA CSM profiles are based on existing information and data provided by the Army and contained in the Fort Ord Administrative Record. Tables and figures associated with the Seaside MRA are located at the end of Section 4.0.

4.1 Seaside MRA Facility Profile

The facility profile provides information on location, physical boundaries, roadways and access, structures and utilities, historical military use, and administrative controls associated with the MRA.

4.1.1 Boundaries and Access

The Seaside MRA is located in the southwestern portion of the former Fort Ord, bordered by the City of Seaside and General Jim Moore Boulevard to the west, the former impact area to the east, Eucalyptus Road to the north, and additional former Fort Ord property to the south (Figure 4.1-1). The Seaside MRA is wholly contained within the jurisdictional boundaries of the City of Seaside.

The Seaside MRA encompasses approximately 419 acres and contains the following four United States Army Corps of Engineers (USACE) property transfer parcels: E23.1, E23.2, E24, and E34 (Table 4.1-1 and Figure 4.1-1).

The Seaside MRA is fenced along the eastern side of General Jim Moore Boulevard and the southern side of Eucalyptus Road, restricting access to most of the MRA and the former impact area to the east and south, respectively (Figure 4.1-1). The narrow area west of General Jim Moore Boulevard is within the MRA but access is not restricted. Use of Eucalyptus Road is restricted by road barriers marked with “road closed” signs located at the intersection of General Jim Moore Boulevard and Eucalyptus Road to the west and at the intersection of Parker Flats Road and Eucalyptus Road to the east. A number of other paved and unpaved roads and dirt trails are located throughout the Seaside MRA (Figure 4.1-1). Detailed information on roadways and access is provided in Table 4.1-2.

4.1.2 Structures and Utilities

The Seaside MRA contains a number of structures and utilities, including 21 existing structures that supported former military activities (Army 2007; Figure 4.1-1). Detailed information concerning location, size, description of structures, presence of asbestos-containing material (ACM) and/or lead-based paint (LBP), if evaluated, and year constructed is provided in Table 4.1-3.

The MRA is not currently served by utilities, such as water and sewer lines. However, a partially aboveground and partially underground line for aquifer recharge water is located

along the western boundary of the MRA parallel to General Jim Moore Boulevard. An abandoned underground communication line that was installed by the Army is reported to be present immediately east of General Jim Moore Boulevard. The exact location of the abandoned communication line could not be confirmed based on a review of available information. A major utility right-of-way for an existing overhead, high-power transmission line and an overhead electrical line runs through the MRA, parallel to General Jim Moore Boulevard (Figure 4.1-1). More detailed information on utilities within the MRA is provided in Table 4.1-2.

4.1.3 Historical Military Use

Figure 4.1-2 shows the locations of known firing ranges and training areas within the MRA. Table 4.1-4 summarizes the historical military uses of these areas within the Seaside MRA. To facilitate previous MEC investigations and removal activities, these locations were divided into four Munitions Response Sites (MRSs), which generally correspond to the four USACE property transfer parcels (Table 4.1-1), except for the narrow area west of General Jim Moore Boulevard, which was not included within the MRS boundaries associated with the MRA. The MRS boundaries are shown on Figure 4.1-3. The MRSs were designated as MRS-15 SEA 1 through MRS-15 SEA 4 and have been collectively referred to as MRS-15 SEA 1-4 (Parsons 2006b).

Initial use of the Seaside MRA began in approximately 1917 when the U.S. government purchased more than 15,000 acres of land and designated it as an artillery range. Although no training maps from this time period have been found, pre-World War II -era military munitions have been removed during previous Army response actions within the Seaside MRA. These munitions included Livens projectiles, Stokes mortars, and 37 millimeter (mm) and 75mm projectiles. Cavalry and artillery troops stationed at the Presidio of Monterey, along with infantry troops stationed at the Presidio of San Francisco, reportedly conducted training activities in the vicinity of the Seaside MRA, although the exact location is not known.

By 1945, 18 firing ranges and training sites were established within the boundaries of the 8,000-acre multi-range area, which was the area around the perimeter of the former impact area. The Seaside MRA lies on the westernmost part of the former multi-range area. The Seaside MRA contained the former firing points and some of the former targets associated with the following training areas:

- Small arms ammunition (SAA) training - Ranges 18, 19, 20, 21, 22, 23, 46, and 59
- Non-firing target range training - Old Range 22 and Range 23M
- Mortar and antitank training – Range 48
- Booby trap training - Range 50

According to the known configuration of the ranges, weapons were fired to the east and southeast from these firing points toward the center of the impact area (Figure 4.1-2). It is expected that munitions activity associated with these ranges would have occurred within the

range fans associated with the firing points. A munitions activity is intended to include military training activities at or near the range that involve the use or handling of military munitions.

4.1.4 Administrative Controls

A number of administrative controls have been and will be imposed on the Seaside MRA, including land use covenants, city ordinances, FORA resolutions, a Memorandum of Agreement (MOA) between FORA and the DTSC, habitat-related requirements, and BOs. The applicable administrative controls are described in more detail in Table 4.1-5. These administrative controls are enforceable and place constraints on field-related activities and future development activities until such time that remediation has been completed and the regulatory agencies have made a determination as to the closure status of the MRA.

4.2 Seaside MRA Physical Profile

The physical profile provides information on topography, geology, vegetation, surface water, and groundwater associated with the MRA that may affect the location, movement, detectability, and recovery of military munitions.

4.2.1 Topography and Geology

The terrain of the Seaside MRA varies from flat to moderately rolling hills. The elevation ranges from approximately 210 to approximately 520 feet mean sea level (msl) with 2 to 15 percent slopes (Figure 4.2-1). Old dune deposits up to 250 feet thick cover most of the area. Table 4.2-1 provides more detailed information on the geology of the former Fort Ord and soils encountered within the Seaside MRA. Surface soil conditions at the MRA are predominantly weathered dune sand (Figure 4.2-1), which provides a relatively good environment for conducting geophysical surveys, including electromagnetic and magnetic surveys.

4.2.2 Vegetation

Vegetation consists primarily of maritime chaparral with patches of non-native grassland and scattered stands of coastal and inland coast live oak woodlands (Table 4.2-2 and Figure 4.2-2; USACE/Jones & Stokes 1992). Poison oak is known to be prevalent in most areas of the MRA. In 2003, as part of the Army's Time-Critical Removal Action (TCRA) for MEC, 398 acres of the Seaside MRA vegetation were cut to make the surface safe and accessible for MEC removal crews. The maritime chaparral was cut to a 6-inch height, and the oak trees were pruned to shoulder height to allow access below the tree canopies. Additional vegetation removal occurred in support of NTCRA. Much of the native vegetation has been reestablished.

4.2.3 Surface Water and Groundwater

Groundwater investigations associated with the Basewide RI/FS have resulted in the installation of a number of groundwater monitoring wells within and adjacent to the Seaside MRA, some of which have been abandoned (Figure 4.2-1). The Seaside MRA overlies the Seaside Groundwater Basin, which is structurally complex and divided into several sub-basins. Groundwater is generally encountered at a depth greater than 100 feet below ground surface (bgs) and is not expected to influence geophysical surveys conducted for MEC remediation activities.

No significant surface-water features or delineated wetlands are reported to be present in the MRA; however, two aquatic features are known to exist to the south and southeast of the MRA.

4.3 Seaside MRA Release Profile

The release profile provides information on the MRA with respect to investigation and removal history, location and extent of military munitions, such as MEC, MPPEH, and MD, and history and conditions of HTW.

4.3.1 Investigation and Removal History

Numerous investigations and removal actions were performed by the Army in the Seaside MRA, which included:

- Field Latrine Investigation from March to November 1997 (USA 2001f)
- MEC Sampling in Small Arms Ranges (OE-15A Grid Sampling) from October to November 1997 (USA 2000a)
- MEC Sampling (OE-15B Grid Sampling) from October 1997 to February 1998 (USA 2000d)
- Impact Area Grid Sampling from March to August 1999 (USA 2001m)
- MEC Removal-Impact Area Roads and Trails from March 1997 to March 1998 (USA 2001d)
- MEC Removal-Blue Line Fuel Break from May to June 1998 (USA 2001p)
- MEC Removal to Support Lead-Contaminated Soil Remediation at Ranges 19, 21, 22, and 23 from April 1997 to June 1999 (USA 2001k)
- MEC Removal to Support Lead-Contaminated Soil Remediation at Range 46 from April to August 1999 (USA 2001k)
- Impact Area Fuel Break Maintenance in 2001 (Parsons 2001)
- TCRA – Vegetation and Surface MEC Removal from December 2001 to March 2002 (Parsons 2006b)

- NTCRA and Phase I Geophysical Operations – 4-foot Removal Action from March 2002 to March 2004 (Parsons 2006b)

The investigation and sampling efforts are summarized in Table 4.3-1. The removal actions are summarized in Table 4.3-2. During the removal actions, burial pits containing MEC were discovered. Additional information on burial pits is provided in the following subsection, and Tables 4.3-2 and 4.3-3 provide detailed information on the specific types of MEC recovered from these burial pits. The results of the removal actions with respect to MEC and MD are summarized in Table 4.3-4 and are shown on Figures 4.3-1, 4.3-2, and 4.3-3. These actions resulted in complete MEC removal to a depth of 4 feet, with the exception of 35 acres identified by the Army as special case areas (SCAs) and a narrow area west of General Jim Moore Boulevard, which was outside the western boundaries of MRS-15 SEA 1 and MRS-15 SEA 2 (Figure 4.3-4). Because the Army's investigation activities did not include the narrow area west of General Jim Moore Boulevard, the status of MEC in this area represents a data gap. Additional information on the SCAs is provided in the following subsection.

Burial Pits

During the removal actions, seven burial pits containing MEC were discovered (Figure 4.3-2). Of the MEC found during the removal actions, 131 of the items and 1 pound of bulk high explosives (HEs) were located in the seven burial pits. Table 4.3-3 provides more detailed information on the specific types of MEC recovered from the burial pits.

Special Case Areas

During the Army's NTCRA and Phase I Geophysical Operations at the Seaside MRA, approximately 35 acres of land were designated as SCAs either because the areas were inaccessible due to surface obstructions or because surface and near-surface features interfered with the signal for the digital geophysical instrumentation, making it difficult to distinguish individual anomalies. The SCAs are shown on Figure 4.3-4 and include:

- Existing Site Fence Area
- Original Fence Line
- Asphalt and Concrete
- Backhoe Excavations
- Excavations requiring Heavy Equipment
- Berms and Retaining Walls
- Structures and Latrines
- Range 46 Weather Station
- Debris Piles

4.3.2 Types of MEC Recovered and Hazard Classification

Table 4.3-4 includes a summary of MEC recovered from the Seaside MRA and associated hazard classification scores. All MEC removed from the Seaside MRA were identified and assigned a hazard classification, except for ordnance components and bulk explosives. Hazard classification scores range from 0 to 3 according to the following descriptions:

Hazard Classification Score	Description
0	Inert MEC that will cause no injury
1	MEC that will cause an injury or, in extreme cases, could cause major injury or death to an individual if functioned by an individual's activities
2	MEC that will cause major injury or, in extreme cases, could cause death to an individual if functioned by an individual's activities
3	MEC that will kill an individual if detonated by an individual's activities

The hazard classification provides a qualitative assessment of risk for MEC. These classifications will be used as inputs in future risk assessments for the Seaside MRA. It should be noted that SAA is not considered in the risk assessment because SAA poses no explosive risk.

4.3.3 Location of MEC and MD

Figures 4.3-1, 4.3-2, and 4.3-3 show the distribution of MEC and MD recovered to date from within the Seaside MRA. A summary of the MEC and MD encountered during previous investigations and removal actions in the Seaside MRA is provided in Table 4.3-5 and included:

- 370 UXO items
- 164 DMM items
- 56,524 pounds of MD (includes expended munitions debris [MD-E] and fragmented munitions debris [MD-F] if weights were documented)

The largest concentrations of MEC were located in MRS-15 SEA 4 between Ranges 18 and 46 in the northern portion of the MRA and in MRS-15 SEA 1 in the area of Range 23 and Watkins Gate Road in the southern portion of the MRA (Figure 4.3-2). MEC were also recovered from several discrete locations as shown on Figure 4.3-2.

The Military Munitions Response Program (MMRP) database indicates that the majority of the MEC recovered from the Seaside MRA were found on the surface, within 6 inches bgs, or in seven burial pits. Figure 4.3-5 shows the distribution of MEC recovered at specified depth intervals and does not include MEC recovered from the burial pits.

Recovered MD (total pounds per grid) in the Seaside MRA is shown on Figure 4.3-3. The majority of the grids contained less than 100 pounds of MD. A majority of the grids that contained more than 100 pounds of MD were concentrated in the southwestern portion of Ranges 19, 20, and 59 and in the southern and western potions of Ranges 23 and 23M, respectively. A portion of the MD identified on Figure 4.3-3 includes small arms scrap (SAS) but not SAA. It should be noted that soil containing small arms and possibly MD was removed from the Seaside MRA (Ranges 18, 19, 21, and 46) as part of the lead-contaminated soil remediation for the Installation Restoration Program (IRP) Site 39. The debris removed as part of the IRP Site 39 program was not likely recorded in the MMRP database and is, therefore, not captured as part of this analysis of MD data.

4.3.4 HTW History and Conditions

A Basewide Range Assessment (BRA) was conducted by the Army to evaluate the potential presence of chemicals of concern (COCs) at known or suspected small arms ranges, multi-use ranges, and military munitions training areas within the former Fort Ord (Shaw/MACTEC 2006). The areas were identified as historical areas (HAs). The objectives of the BRA investigation activities were to identify which HAs could be eliminated from consideration for potential remediation related to COCs, and to identify areas that require additional investigation for potential chemical contamination, or should be considered for remediation/habitat mapping related to COCs.

Table 4.3-6 summarizes the findings of the BRA investigation activities with respect to HTW for each MRS. As stated in the FOSET, based on the BRA, no further action has been recommended for HAs within this MRA (Army 2007). The Seaside MRA is also part of IRP Site 39 at the former Fort Ord. Previous soil remediation activities were conducted as part of the Site 39 program, which has an existing Record of Decision (ROD). In an effort to facilitate the closure of Site 39 Seaside Parcels with respect to risks related to residual metals in soil, a Draft Post-Remediation Health Risk Assessment (PRHRA) has been prepared on behalf of the Army for the Seaside MRA Parcels. The results indicate that the residual metals concentrations in soil do not pose an unacceptable risk to human health and the environment within the Seaside MRA Parcels and that a residential restriction due to residual metals concentrations in soil is not necessary on Ranges 18, 19, 21, and 46. The results of the PRHRA are presented in the "Draft Post-Remediation Risk Assessment, Seaside Parcels 1 through 4, Former Fort Ord, California, Revision C," prepared by Shaw/MACTEC in November 2007 (Shaw/MACTEC 2007b).

4.3.5 Regulatory Status

Work completed to date has been documented in after action reports, which have received regulatory reviews; however, the regulatory agencies have identified the following outstanding issues:

- The CERCLA process must be completed for the Seaside MRA, including development of an RI/FS, development of a Proposed Plan, and completion of a ROD;

- MEC removal action in the SCAs must be completed in accordance with the Army's approved removal action work plan or other agency-approved work plan;
- Additional quality assurance and MEC removal, if necessary, must be completed in areas proposed for residential development within the Seaside MRA.

4.4 Seaside MRA Land Use and Exposure Profile

The land use and exposure profile provides information on the MRA with respect to cultural resources, the current and reasonably foreseeable future uses of the land, and the potential human receptors that may be exposed to military munitions.

4.4.1 Cultural Resources

According to archaeological records, the greater Monterey Peninsula was occupied by Native American groups, including the Ohlone (Costanoan) Indians (EA 1991). Monterey County has designated the southeastern margin of the former Fort Ord as an archaeologically sensitive zone based on two known archaeological sites (EA 1991). The remaining portions of the former Fort Ord have been designated as having low or no archaeological sensitivity. The Seaside MRA is located in the southwestern portion of the former Fort Ord in an area designated as having no archaeological sensitivity.

Actions to be taken at the Seaside MRA will be in compliance with the Programmatic Agreement among the Department of the Army, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer Regarding the Base Closure and Realignment Actions at Fort Ord, California.

4.4.2 Current Land Use

The Seaside MRA is currently undeveloped, with the exception of General Jim Moore Boulevard, Eucalyptus Road, and a major utility corridor for the high-power transmission line that runs along General Jim Moore Boulevard (Figure 4.1-1). Residual structures that supported training activities at the MRA have been abandoned or are scheduled for demolition.

For the area immediately west of General Jim Moore Boulevard, which is within the MRA but outside of the MRSs, there is a newly installed aquifer recharge water line adjacent to the border with the City of Seaside that is partially aboveground and partially underground. This is a temporary line that does not require access on a routine basis. The area west of General Jim Moore Boulevard is not restricted for access by any control measure, such as fencing.

The area immediately east of General Jim Moore Boulevard and immediately south of Eucalyptus Road has restricted access via the existing site fence. Although infrequent, trespassing has occurred through this area. Along the eastern border of the MRA with the former impact area, a borderland development buffer area was established in the Habitat Management Plan (HMP) along the interface with the natural resources management area

(NRMA) designated as habitat reserve. The setback requirements for the borderland buffer were defined in the Draft Habitat Conservation Plan (HCP) as being 200 feet wide, which must be managed and maintained as prescribed.

Interim uses for this MRA may also include staging of helicopters in support of Army burn activities.

4.4.3 Reasonably Foreseeable Future Land Use

Table 4.4-1 and Figure 4.4-1 identify the proposed uses of the MRA by parcel. It is important to note that the development land use category encompasses infrastructure activities, such as roadway and utility corridor construction, as well as commercial/retail facilities, parks, and borderland activities.

As shown in the Base Reuse Plan, this area is predominantly planned for residential reuse. To facilitate reuse, infrastructure improvements, such as utilities and roadways, are required as described in the previous paragraph. A public park is planned for the southern portion of the Seaside MRA (Figure 4.4-1).

4.4.4 Potential Human Receptors

A number of potential human receptors that could come in contact with residual MEC have been identified for current and future land use scenarios. The potential human receptors include:

- Construction Workers (persons conducting surface and subsurface construction activities) – current/future
- Utility Workers (persons installing and maintaining surface and subsurface utilities) - current/future
- Trespassers (persons not authorized to enter or use an area) – current/future
- Firefighters (may require installation of fire breaks) – current/future
- Emergency Response Workers (police and emergency medical technicians conducting surface activities) – current/future
- Ancillary Workers (biologist, archaeologists) – current/future
- Residents (persons residing in the area conducting surface and subsurface activities) – future
- Recreational users (persons biking or on foot) – future

4.5 Seaside MRA Ecological Profile

The ecological profile provides information on the MRA with respect to biological resources, plant communities and habitats, threatened and endangered species, and habitat management. This information is discussed below and provided in Table 4.5-1.

As discussed in Section 4.3.4, COCs related to HTW have been previously addressed and no further action was recommended. Therefore, potential exposure of ecological receptors to the primary risk factors has been mitigated to an acceptable level and ecological receptor exposure is not considered further in this CSM.

The HMP identifies the Seaside MRA as development (which includes residential reuse) with a borderland development buffer area along the interface with an NRMA designated as habitat reserve (Figure 4.5-1). The NRMA interface separates the development category land within the Seaside MRA from the adjacent habitat reserve area of the former impact area. The NRMA and habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species.

FORA will implement the mitigation requirements identified in the HMP during MEC activities in accordance with the BOs developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b). For borderland areas, FORA will follow best management practices while conducting work to prevent the spread of exotic species, limit erosion, and limit access to the NRMA.

4.5.1 Major Plant Communities and Ecological Habitats

Vegetation consists primarily of maritime chaparral with patches of non-native grassland and scattered stands of coastal and inland coast live oak woodlands (Table 4.2-2 and Figure 4.2-2; USACE/Jones & Stokes 1992). Poison oak is known to be prevalent in most areas of the MRA.

4.5.2 Threatened and Endangered Species

The USFWS final Biological Opinion for the Disposal and Reuse of Fort Ord (USFWS BO) required that an HMP be developed and implemented to reduce the incidental take of listed species and loss of habitat that supports these species. The HMP for the former Fort Ord complies with the USFWS BO and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival. The HMP incorporated conservation measures pursuant to the USFWS BO dated prior to issuance of the HMP in April 1997. Since April 1997, three additional BOs have been issued that are relevant to MEC removal activities (USFWS 1999, 2002, and 2005). Future MEC remediation is required to be consistent with the applicable conservation measures.

Plant species identified at the former Fort Ord that are either threatened or endangered include Contra Costa goldfields (*Lasthenia conjugens;* endangered), sand gilia (*Gilia tenuiflora ssp. Arenaria;* endangered), and Monterey spineflower (*Chorizanthe pungens var. pungens;* threatened).

In 2004, the California tiger salamander (CTS; *Ambystoma californiense*) was identified as a threatened species. CTS may be found as far as 2 kilometers (km) from aquatic breeding habitats. As shown on Figure 4.5-1, the CTS may be found in MRS-15 SEA 1 and MRS-15 SEA 2 as these two MRSs are within 2 km of aquatic features that may provide habitat for the CTS.

The Seaside MRA is identified within the HMP as requiring special management for the boundaries between development areas and the NRMA. The requirements have both interim and long-term maintenance implications. As presented in the HMP, with the exception of boundary management requirements, the Seaside MRA is available for development without restrictions although future landowners will still be required to comply with environmental laws enforced by the federal, state, and local agencies, including the ESA.

4.5.3 Other Communities and Species of Concern

Dominant vegetation in the Seaside MRA consists of maritime chaparral with patches of non-native grassland. The maritime chaparral consists of sclerophyllous (hard-leaved) shrub communities within a live oak woodland (coastal coast and inland coast) region that is best developed on sandy soils within the summer fog zone. This type of chaparral is considered rare by the California Department of Fish and Game (CDFG) and is declining statewide. Development has now limited a majority of this community type in the Monterey Bay Area to undeveloped portions of the former Fort Ord. As identified in the HMP, a number of species could be found on the Seaside MRA, as identified by parcel in Table 4.5-2. The following species of concern to the State of California are identified in the HMP as having possible occurrence in the Seaside MRA: seaside bird's beak (*Cordylanthus rigidus ssp. Littoralis*), toro manzanita (*Arctostaphylos montereyensis*), sandmat manzanita (*Arctostaphylos pumila*), Monterey ceanothus (*Ceanothus cuneatus var. rigidus*), Eastwood's ericameria (*Ericameria fasciculata*), and coast wallflower (*erysimum ammophilum*).

4.6 Seaside MRA Pathway Analysis

As discussed in Section 4.3.4, potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army. Based on the Army's evaluation in the FOSET, no further action relative to the COCs is required under the ESCA RP. Therefore, no further discussion of potential exposure to human or ecological receptors to COCs relative to the HTW program is presented in this pathway analysis. The primary focus of the exposure pathway analysis is for human health risk from MEC that are potentially present.

4.6.1 Exposure Pathways

An exposure pathway analysis was conducted for the Seaside MRA using the information gathered in the CSM profiles. Exposure pathways include a source, access, receptor, and activity. The likelihood of exposure, however, has been significantly reduced as a result of previous removal actions by the Army. Exposure pathways for the Seaside MRA are presented on Figure 4.6-1 and discussed below.

Source

Source areas within the Seaside MRA were addressed during the Army's previous removal actions, with the exception of the SCAs (Figure 4.3-4). The historical source areas within the Seaside MRA are shown on Figure 4.1-3, and recovered MEC and MD from these areas are shown on Figures 4.3-1 through 4.3-3. The sources include firing points, target areas, and range safety fans for military weapons training activities and troop training/maneuver areas. There are no known source areas outside of MRS-15 SEA 1-4 to the west of General Jim Moore Boulevard.

Figure 4.6-2 illustrates the most likely release mechanisms for MEC being found in the Seaside MRA, which include:

- Mishandling/Loss, Abandonment, and Burial (Military Weapons Training)
- Direct and Indirect Firing and Thrown (Military Weapons Training)
- Intentional Placement, Mishandling/Loss, Abandonment, and Burial (Troop Training and Maneuvers)

Access

Access to the SCAs and historical source areas is restricted by the fence around MRS-15 SEA 1-4, located east of General Jim Moore Boulevard and south of Eucalyptus Road. Access to the area west of General Jim Moore Boulevard is unrestricted.

Receptor / Activity

Table 4.6-1 identifies the potential human receptors and exposure media as Ground Surface or Below Grade.

4.6.2 Exposure Pathway Analysis

As discussed above, Figure 4.6-1 graphically presents the exposure pathways analysis for the Seaside MRA. The graphic shows the current and future potentially incomplete and potentially complete pathways for activities in the Seaside MRA.

A small risk of MEC exposure remains to current and future receptors during intrusive activities (i.e., digging). There is also a potential risk of MEC exposure within the hillside

west of General Jim Moore Boulevard (Figure 4.3-4) because the information available to date does not appear to be sufficient to conclude presence or absence of MEC in this area.

4.7 Seaside MRA Conclusions and Recommendations

Potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army. Based on the Army's evaluation in the FOSET, no further action relative to the COCs is required under the ESCA RP. The CSM has identified a potential for human health risk associated with residual (or potentially present) MEC in the Seaside MRA.

As required by the AOC, the SEDR provides conclusions and recommendations for each MRA. Generally, the SEDR recommendations identify that a particular MRA falls into one or more of the following categories:

- No response action or no further response action is appropriate
- Response action is necessary
- Additional data are required to fill data gaps
- Proceed to RI

The MEC encountered within the Seaside MRA are consistent with the historical use as a weapons and troop training area. However, data gaps, uncertainties, and/or open regulatory issues have been identified and must be addressed prior to receiving regulatory closure and implementing the planned reuse of the MRA. Therefore, the Seaside MRA falls into two of the categories: 1) response action is necessary, and 2) additional data are required to fill data gaps. Based on the existing data for the Seaside MRA, the following recommendations are suggested:

- Response Action - Complete the Army's NTCRA to mitigate risk related to potential MEC in the SCAs.
- Collection of additional data to fill data gaps
    - Collect data sufficient to support the MEC RI on the hillside west of General Jim Moore Boulevard
    - Conduct a Residential Quality Assurance (RQA) Pilot Study to assess the potential for risk from undetected MEC in future residential areas.
- Proceed with Documentation - Prepare the RI/FS and subsequent ROD documentation.

The proposed pathway to regulatory closure incorporating the above recommendations is presented in Section 13.0 of this SEDR.

Table 4.1-1
Seaside MRA - Parcel Numbers, Acreage, and MRS Identifiers

USACE Parcel Number (for land transfer)	Acreage (approximate)	MRS Identifier
E24	198	MRS-15 SEA 1
E34	97	MRS-15 SEA 2
E23.1	48	MRS-15 SEA 3
E23.2	76	MRS-15 SEA 4
MRA TOTAL	419	

Note: Acreages for USACE Parcels E24 and E34 are slightly larger than their corresponding MRSs.

Table 4.1-2
Seaside MRA – Site Features

Feature	Description
Roadways	• General Jim Moore Boulevard is an active two-lane roadway running in a north/south direction through the MRA and is identified as a major roadway corridor. • Eucalyptus Road is a closed two-lane roadway running in an east/west direction along the northern boundary of the MRA that historically allowed access from General Jim Moore Boulevard to the inland portions of the former Fort Ord. • Watkins Gate Road is a secondary paved roadway that extends to the east through the MRA and into the former impact area. • Other roadways (paved or unpaved) that cross the MRA include Broadway Avenue, Evolution Road, Austin Road, and Pipeline Road (not shown on figures).
Structures and Utilities	• Twenty-one structures, which supported former range activities, exist at the MRA. The MRA is not currently served by water and sewer lines. • For the area immediately west of General Jim Moore Boulevard, which is within the MRA but outside of the MRSs, there is a newly installed aquifer recharge water line adjacent to the border with the City of Seaside that is partially aboveground and partially below ground. This is a temporary line that does not require access on a routine basis. • An abandoned underground communication line that was previously installed by the Army is reported to be present immediately to the east of General Jim Moore Boulevard; however, the exact location could not be confirmed based on available information. • A 100-foot-wide right-of-way runs through the MRA parallel to General Jim Moore Boulevard and north of Eucalyptus Road. This right-of-way was granted to Pacific Gas and Electric Company by the Army. The right-of-way contains high voltage (80 kilovolt) electrical wires supported by towers and low voltage (30 and 15 kilovolt) electrical wires supported by standard wooden poles. The low voltage wires are reportedly no longer active. There are additional wires on the wooden poles for data/communication purposes. No known easement has been granted for these activities.
Fencing and Access	• Access to the area east of General Jim Moore Boulevard is restricted by four-strand barbed-wire fencing reinforced with concertina, locked chain-link gates with concertina on the bottom to block the access roads into MRS-15 SEA 1 and MRS-15 SEA 2, and warning signs posted along the fencing. • Access to the area west of General Jim Moore Boulevard is unrestricted. • Access to the area south of Eucalytus Road is restricted by four-strand barbed-wire fencing reinforced with concertina and locked chain-link gates with concertina on the bottom to block the access roads into MRS-15 SEA 3 and MRS-15 SEA 4. • Vehicular access to Eucalyptus Road is restricted by barriers marked with “Road Closed” signs (at the General Jim Moore Boulevard/Eucalyptus Road and Parker Flats Road/Eucalyptus Road intersections).

Table 4.1-3
Seaside MRA - Existing Structures and Buildings

Parcel Number	Facility Number	Area (square footage)	Description	Asbestos-Containing Material	Lead-Based Paint	Year Built
E24	R9232	436	Range Support Building	Unknown	Unknown	Unknown
E24	R9230	410	Field Range Latrines	Unknown	NO	1984
E24	3908	419	Range House	Unknown	YES	1968
E24	R9221	307	Observation Tower	Not surveyed	Unknown	Unknown
E24	R9220	419	Field Range Latrines	No ACM	NO	1985
E34	8312	453	Observation Tower	No ACM	YES	1958
E34	R9190	1,155	Field Range Latrines	Rated 6 to 13	NO	1984
E23.2	R9181	189	Field Range Latrines	No ACM	NO	1984
E23.2	R9483	190	Field Range Latrines	Rated 6 to 13	NO	1984
E23.2	8302	121	Observation Tower	No ACM	YES	1959
E23.1	8304	659	Observation Tower	No ACM	YES	1963
E23.2	R9180	149	Field Range Latrines	Rated 6 to 13	NO	1984
E23.2	8301B	89	Range Support Building	No ACM	Unknown	Unknown
E23.2	8301A	452	Range Support Building	No ACM	Unknown	Unknown
E23.2	R9482	185	Field Range Latrines	No ACM	NO	1984
E23.2	3940	424	Covered Training Area	No ACM	NO	1989
E23.2	3939	1,388	Covered Training Area	No ACM	YES	1968
E23.2	3941	456	Ammunition Magazine	Rated 6 to 13	YES	1950
E23.2	R9460	463	Range Support Building	No ACM	NO	1984
E23.2	3983	73,490	Combat Pistol Range	Not surveyed	YES	1968
E23.2	R9463	186	Field Range Latrines	Unknown	NO	1984

Table 4.1-4
Seaside MRA – Historical Military Use

Location	Description
Range 18	• Used as a small arms firing range at the time of closure. • Past records indicate that 5.56mm, 7.62mm, and 30-caliber machine gun rounds were used or projectiles found on this range. • A historical Range 18, shown on a 1961 training facilities map, is roughly coincident with the current position of Range 18.
Range 19	• Range 19 is shown on maps dating back to 1956. • Use of the range is documented as a firing range from 1973 to present. • Some type of training with small arms took place in the 1940s and possibly early 1950s.
Range 20	• Used as a 10 meter machine gun and 25 meter rifle range at the time of closure. • Past records indicate that 5.56mm, 7.62mm, and 30-caliber machine gun rounds were used or projectiles found on this range.
Range 21	• Used as a 10 meter machine gun and 25 meter rifle range at the time of closure. • Past records indicate that 5.56mm, 7.62mm, and 30-caliber machine gun rounds were used or projectiles found on this range.
Range 22 and Old Range 22	• Used as a 50-caliber machine gun range at the time of closure. • Past records indicate that 5.56mm, 7.62mm, and 30-caliber machine gun rounds and 106mm recoilless rifle rounds were also used or projectiles found on this range. In addition, M48 series 50-caliber spotter-tracer projectiles (A574) that are used to check the aim of the 106mm recoilless rifle may also be present on the range. • Another Range 22, which was roughly parallel to General Jim Moore Boulevard, was shown on range control maps at the time of closure. It was decommissioned in the past and labeled as "non-firing" on numerous historical maps. According to reviewed documents, it was an identified target detection range (a non-firing range, use of live ammunition was not authorized). This decommissioned Range 22 is labeled as "Old Range 22" on applicable maps in this report.
Range 23	• Used as a squad attack range at the time of closure. • Past records indicate that 5.56mm and 7.62mm machine gun rounds, 40mm HE projectiles, and claymore mine components (electrical firing devices) were used or projectiles found on this range. • A 1961 training facilities map indicates an automatic rifle Table VIII (automatic rifle training), and a 1964 map shows a Range 23. Both ranges are roughly coincident with the current position of Range 23.
Range 23M	• Used as a non-firing training area for laser-aimed Dragon anti-armor weapons. • Some Dragon missiles and 4.2-inch mortar fragments have been found on the range.
Range 46	• Used as a small arms range from the late-1950s up to the time of closure. • Firing point located within MRS-15 SEA 4 with target sites located downrange to the southeast in front of a berm. • Records and field investigations indicate that the military munitions at this range were restricted to small arms (pistols and rifles).

Table 4.1-4
Seaside MRA – Historical Military Use

Location	Description
Range 48	• Used as a light antitank weapon (LAW) range at the time of base closure. • The firing point located within MRS-15 SEA 4 with target locations located downrange to the southeast. • Records show range was in use since the 1940s. • Used for weapons familiarization training, and as a sniper range, mortar range, and machine gun range. • Records and recent field investigations indicate the following military munitions used or found in this range: – fragmentation hand grenades; – practice rifle grenades; – practice mines, including claymore and antipersonnel, and AT types; – Dragon-guided and high-explosive antitank (HEAT) missiles; – mortars, including HE, illumination, target practice, and white phosphorous types; – projectiles including HE, HEAT, illumination, practice, smoke, and subcaliber types; – HEAT, incendiary, practice, and subcaliber rockets illumination signals; and small arms.
Range 50	• Identified as a Booby Trap training area in 1945.
Range 59	• Shown on a 1956 training facilities map, indicating that a range labeled M1 Table XI (M1 rifle training) existed in MRS-15 SEA 2. • A 1967 training facilities map shows a Range 59 that is roughly coincident with that area. Range 59 appears to have been decommissioned in the past and is not shown on range maps at the time of base closure.

References: USACE 1997a and Parsons 2006b

Table 4.1-5
Seaside MRA – Administrative Controls

Type	Description
Land Use Covenants	• As identified in the FOSET, Covenants Restricting the Use of the Property (CRUPs) have been imposed on the Seaside MRA parcels (Army 2007). • These CRUPs are defined in the "Memorandum of Agreement Among the Fort Ord Reuse Authority, Monterey County and Cities of Seaside, Monterey, Del Rey Oaks and Marina, California State University Monterey Bay, University of California Santa Cruz, Monterey Peninsula College, and the Department of Toxic Substances Control Concerning Monitoring and Reporting of Environmental Restrictions on the Former Fort Ord, Monterey County, California." • These restrictions involve the enforcement of site review and reporting requirements and agency cost recovery/reimbursement requirements as imposed by the DTSC.
Restrictions to Digging/ Excavation	• City of Seaside Ordinance No. 259 amending the municipal code referred to as Chapter 15.34. • The ordinance prohibits excavation, digging, development, or ground disturbance of any type on the former Fort Ord that involves the displacement of 10 or more cubic yards of soil without approval.
FORA Resolution 98-1	• An approved FORA resolution that contains proposed and suggested measures to avoid or minimize hazardous material impact.
ESCA MOA	• The MOA between FORA and the jurisdictions for the purpose of defining the terms of an agreement for holding and managing (ownership and responsibilities) property while remedial work is accomplished under an ESCA. • The MOA establishes FORA's ownership during the MEC remediation period; identifies that jurisdictions need to provide public safety response from police, fire, and other emergency personnel as needed; establishes control of access to ESCA property during the MEC remediation period; and agreement that access to properties will be governed by the restrictions included in the Land Use Covenant accompanying the transfer of the property.
Habitat Management Plan	• The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. Specific MEC activities were addressed in Chapter 3 of the HMP (USACE 1997b).
Biological Opinions	• Since the release of the HMP, a number of BOs have been issued that are relevant to the MEC remediation period (USFWS 1999, 2002, and 2005). Accordingly, some information has been updated and additions have been made to the sections that address MEC activities. • Future MEC work is required to be consistent with the applicable conservation measures.

Table 4.2-1
Seaside MRA – Geology and Soils

Type	Description
General Geology	• The former Fort Ord is located within the Coast Ranges Geomorphic Province, which consists of northwest-trending mountain ranges, broad basins, and elongated valleys generally paralleling the major geologic structures. • The former Fort Ord is located at the transition between the mountains of the Santa Lucia Range and the Sierra de la Salinas to the south and southeast, respectively, and the lowlands of the Salinas River Valley to the north. • The geology of the former Fort Ord generally reflects this transitional condition. Older, consolidated rocks are characteristically exposed in the mountains near the southern base boundary, but are buried under a northward-thickening sequence of younger, unconsolidated alluvial fan and fluvial sediments in the valleys and lowlands to the north. In the coastal lowlands, these younger sediments commonly interfinger with marine deposits. • The former Fort Ord and the adjacent areas are underlain, from depth to ground surface, by one or more of the following older, consolidated units: Mesozoic granite and metamorphic rocks; Miocene marine sedimentary rocks of the Monterey Formation; and upper Miocene to lower Pliocene marine sandstone of the Santa Margarita Formation (and possibly the Pancho Rico and/or Purisima Formations). • Locally, these units are overlain and obscured by geologically younger sediments, including: Pliocene-Pleistocene alluvial fan, lake, and fluvial deposits of the Paso Robles Formation; Pleistocene eolian and fluvial sands of the Aromas Sand; Pleistocene to Holocene valley fill deposits consisting of poorly consolidated gravel, sand, silt, and clay; Pleistocene and Holocene dune sands; recent beach sand and alluvium. • The MRA includes deposits from the Paso Robles Formation and sand and gravel deposits of Aromas Sandstone.
Topography and Soils	• Terrain varies from flat to moderately rolling with 2 to 15 percent slopes. • Elevation ranges from approximately 210 to approximately 520 feet msl. • Soils consist predominantly of Baywood Sand with 2 to 15 percent slopes. • Soils formed by Pleistocene-age dune deposits (Baywood Sand) that may be up to 250 feet thick with Arnold Santa Ynez Complex sand deposits, which are older but similar in composition, to the east. The Baywood Sand deposits cover the entire MRA. • Mature plant communities largely stabilize these widespread, unconsolidated dune deposits.

References: EA 1991, HLA 1995, and the Fort Ord MMRP Database

Table 4.2-2
Seaside MRA – Vegetation

MRS Identifier	USACE Parcel Number	Vegetation
MRS-15 SEA 1	E24	All vegetation within the MRSs of the Seaside MRA was mechanically or manually cut to support the TCRA and NTCRA that were conducted by the Army from 2001 to 2003. The current vegetation may include early seral stages of maritime chaparral. Coast live oak woodland strands are scattered throughout the MRS.
MRS-15 SEA 2	E34	All vegetation within the MRSs of the Seaside MRA was mechanically or manually cut to support the TCRA and NTCRA that were conducted by the Army from 2001 to 2003. The current vegetation may include early seral stages of maritime chaparral
MRS-15 SEA 3	E23.1	All vegetation within the MRSs of the Seaside MRA was mechanically or manually cut to support the TCRA and NTCRA that were conducted by the Army from 2001 to 2003. The current vegetation may include early seral stages of maritime chaparral. A coast live oak woodland strand is located in the northwestern portion of the MRS, and individual coast live oaks are scattered throughout the MRS.
MRS-15 SEA 4	E23.2	All vegetation within the MRSs of the Seaside MRA was mechanically or manually cut to support the TCRA and NTCRA that were conducted by the Army from 2001 to 2003. The current vegetation may include early seral stages of maritime chaparral. A coast live oak woodland strand is located in the northwestern portion of the MRS, and individual coast live oaks are scattered throughout the MRS.

Table 4.3-1
Seaside MRA – Investigation and Sampling

Activity	Summary
Field Latrine Investigation	• From March to November 1997, removal work was performed on 52 of the approximately 132 field latrines scattered throughout the former Fort Ord because MEC may have been discarded in the latrines. Two field latrines located in MRS-15 SEA 1 were investigated, but no MEC were encountered (USA 2001f).
MEC Sampling in Small Arms Ranges (OE-15A Grid Sampling)	• From October to November 1997, 20 100-foot by 100-foot grids located in Site OE-15A were sampled to determine the need and scope of future removal actions. Site OE-15A consisted of those areas within the range fans of Small Arms Ranges 18, 19, 21, 39, and 46. • Five of the 20 sample grids were placed within the boundaries of the Seaside MRA. MRS-15 SEA 2 contained one grid in Range 19 (Grid G1); MRS-15 SEA 4 contained three grids in Range 18 (Grids G1, G2, and G3) and one grid in Range 46 (Grid G1). • Schonstedt magnetometers were used to investigate 100 percent of each sample grid. All anomalies detected were investigated to depth and resolved (USA 2000a).
MEC Sampling (OE-15B Grid Sampling)	• From.October 1997 to February 1998, 41 100-foot by 100-foot grids located in OE-15B were sampled to determine the need and scope of future removal actions and establish the types and distribution of MEC in the impact area. • Of the 41 sample grids, six were located within the boundaries of the Seaside MRA; five grids (G16, G18, G19, G20, and G37) were located in MRS-15 SEA 1; and one grid (G21) was located in MRS-15 SEA 2. • Schonstedt magnetometers were used to investigate 100 percent of each sample grid (USA 2000d).
Impact Area Grid Sampling	• Between March and August 1999, 213 100-foot by 100-foot grids in MRS-MOCO.2, MRS-15 SEA 1-4, MRS-DRO.2, and MRS-MOCO.1 were sampled to determine the need and scope of future removal actions. • One hundred fifty-five sample grids were placed in MRS-15 SEA 1-4, and 100 percent of each grid was investigated with Schonstedt magnetometer (USA 2001m).

Table 4.3-2
Seaside MRA – Removal Activities, Burial Pits, and Special Case Areas

Activity	Summary
MEC Removal – Impact Areas Roads and Trails	• From March 1997 to March 1998, vegetation clearance operations and a 4-foot removal conducted with Schonstedt magnetometers were performed on eight range roads and 32 dirt trails in the former impact area to facilitate travel for field activities. Six of the roads (Winchester, Range 23, Hangfire, Tracer, Canister, and Broadway) were located in the Seaside MRA. • MEC items were removed from grids on Winchester Road, Hangfire Road, and Range 23 Access Road located in MRS-15 SEA 1 (USA 2001d).
MEC Removal – Blue Line Fuel Break Reestablishment	• Between May and June 1998, vegetation clearance operations and a 4-foot removal (with Schonstedt magnetometers) were performed on the 30-foot-wide, approximately 6-mile-long fuel break (the Blue Line) that extends west along the southern border of MRS-MOCO.2 and MRS-15 SEA 3–4 and then bends south along the eastern boundaries of MRS-15 SEA 1–2, MRS-DRO.1–2, MRS-MOCO.1, and MRS-46. • This work was performed to reestablish the fuel break as part of the wildfire safety and control program in the former impact area. MRS-15 SEA 1–4 contained 133 contiguous sections (grids) of this fuel break (USA 2001p).
MEC Removal to Support Lead-Contaminated Soil Remediation – Ranges 19, 21, 22, and 23	• From April 1997 to June 1999, 4-foot removal operations with Schonstedt magnetometers were conducted in Ranges 19, 21, 22, and 23 to support efforts to remediate spent SAA and lead-contaminated soil and to provide safe access routes for personnel and equipment into the areas (USA 2001k). • In Ranges 19, removal operations were completed on nine access road sections and 23 target boxes to prepare the target boxes for the lead remediation work. No MEC were encountered during this operation. • In Range 21, removal operations were performed on, in front of, and behind a berm to prepare the area for the lead remediation work. The removal work in front of the berm was stopped because the excessive anomalies in the area interfered with the Schonstedt. The removal operations on and behind the berm were successfully completed. No MEC were encountered. • In Range 22, removal operations were planned to prepare the area for the lead remediation work; however, they were cancelled because it was determined that there was insufficient lead contamination to warrant remediation operations. • In Range 23, removal operations were completed on an access road into the range before operations were cancelled because it was determined that there was insufficient lead contamination to warrant remediation operations. Three MEC items were found on the access road before work was stopped (a 22mm subcaliber M744 projectile, a practice 3-inch Stokes trench mortar, and a practice 40mm M781 cartridge).
MEC Removal to Support Lead – Contaminated Soil Remediation – Range 46	• From April to August 1999, 4-foot operations with Schonstedt magnetometers were conducted on 26 grids around Range 46 to support efforts to remediate spent SAA and lead-contaminated soil around the range's firing line (USA 2001k). • Of the 26 cleared grids, all or a portion of 23 were located in MRS-SEA 4. • During this work, no MEC were encountered.
Impact Area Fuel Break Maintenance	• To prevent and control wildfires in the former impact area, maintenance work was conducted in 2001 on old roads, trails, and fuel breaks in the impact area used during military training activities. Surface removals were conducted on the 15-foot sides of each fuel break, and a 4-foot removal (with deeper excavations approved by the USACE Ordnance and Explosives Safety Specialist [OESS]) was performed with

Table 4.3-2
Seaside MRA – Removal Activities, Burial Pits, and Special Case Areas

Activity	Summary
	Schonstedt magnetometers on some of the fuel breaks' 15- to 20-foot-wide centers. Five of the reestablished fuel breaks had sections that were within MRS-15 SEA 1-4: Austin Road, General Jim Moore Road (North and South), Broadway Road (West), Watkins Gate Road, and Nowhere Road (Parsons 2001).
TCRA	• During December 2001 to March 2002, a TCRA was completed over the surface of MRS SEA.1-4 (this action was done separately under an Action Memorandum, which describes the decision for conducting the TCRA). The TCRA was done to address the imminent threat posed to human health (public safety) or welfare or the environment posed by the presence of MEC on the surface on MRS-SEA 1-4 (Parsons 2006b). • To make the surface safe and accessible for UXO removal crews, the predominantly maritime chaparral vegetation covering MRS-15 SEA 1-4 was cut. UXO teams visually searched the surface with the aid of Schonstedt magnetometers to help detect items that might be under debris. • All surface items that were observed or detected with a Schonstedt were removed.
NTCRA & Geophysical Operations	• During March 2002 to March 2004, an NTCRA and 100 percent digital geophysical survey were performed at the MRA. The NTCRA was performed on five distinct removal areas within the MRA that were determined based on the results of the previous investigations (portions of MRS-15 SEA 1-4 adjacent to the removal areas were also subjected to the NTRCA if MEC were found near the removal area boundaries). The NTCRA was performed by the Army to address the threat to human health (public safety) or the welfare or the environment posed by the presence of MEC of MRS-15 SEA 1-4 (Parsons 2006b). • A 100 percent digital geophysical survey was also conducted by the Army on all remaining portions of the site not covered by the NTCRA. The 100 percent digital geophysical survey was conducted to confirm the previous sampling work done. Prior to the geophysical survey, approximately 87 acres of vegetation in three areas were re-cut in fall 2003. • The geophysical operations specified in he Army's approved MRS-15 SEA 1-4 Site-Specific Work Plan were completed in all accessible portions (about 91 percent) of MRS-15 SEA 1-4 to the maximum capacity of the technologies and instruments used. Analog and digital ordnance detection instruments were used over all accessible portions of MRS-15 SEA 1-4 to locate subsurface anomalies, and all detected anomalies were resolved.
NTCRA Burial Pits	• During the NTCRA and Phase I Geophysical Operations, seven burial pits containing MEC were discovered (Parsons 2006b). • The MEC recovered from the seven burial pits consisted of 105 M10 series hand grenade fuzes, 17 ordnance components, three MKII practice hand grenades, and six 3-inch MK1 practice mortar (Table 4.3-3). • Military munitions recovered from other burial pits (containing MD) included 80 SAA and 22 items determined to be MD-E consisting mostly of expended 3-inch and 4-inch MK1 practice mortars. • All MEC items found below 8 inches and 86 percent of all items found in MRS-15 SEA 3 were located in a single burial pit.

Table 4.3-2
Seaside MRA – Removal Activities, Burial Pits, and Special Case Areas

Activity	Summary
NTCRA Special Case Areas	• During the NTCRA and Phase I Geophysical Operations, approximately 35 acres of land were inaccessible or near-surface sources of interference prevented the digital geophysical instruments from being able to distinguish individual anomalies (Parsons 2006b). These areas were categorized by the Army as SCAs, and include the following: • Existing Site Fence Area The metallic site fence and associated chain-link access gates to the MRSs along General Jim Moore Boulevard and Eucalyptus Road interfered with the geophysical instruments in areas within 5 to 15 feet of the fence. • Original Fence Line The original fence line area is located 10 to 15 feet inside the boundaries for MRS-SEA 1-3, just east of General Jim Moore Boulevard. The original fence, which consisted of concertina, was removed, and electromagnet operations were performed over the area to collect metal debris associated with the deteriorating fencing. Following the electromagnetic operations, the digital instrument response was saturated in the immediate area of the original fence line because the soil surface was magnetized due to the electromagnetic operations. As a result, this area could not be geophysically surveyed for the presence of military munitions. • Asphalt and Concrete The asphalt range roads extending from General Jim Moore Boulevard and Eucalyptus Road into the Seaside MRA and the adjacent asphalt/concrete range pads made the surface inaccessible to the geophysical instruments at the time of the investigation. There are also several range structures (e.g., range towers, break areas, etc.) on top of the asphalt and culverts in the subsurface near the asphalt roads. • Backhoe Excavations Approximately 350 locations require backhoe excavations. These include areas where backhoe excavations were started but not completed due to budgetary constraints and areas containing buried cable/wire, grounding rods, range markers, reinforced concrete, and wood. • Heavy Equipment Excavations Approximately 40 locations require excavation with heavy equipment. These include concrete bunkers, fighting positions, flag/utility poles, target boxes, tie downs, utility poles, and wooden stairs. • Berms There are several berms in the Seaside MRA, some of which are reinforced with wooden retaining walls. The metal connectors of the retaining walls prevented geophysical surveys from being conducted in some of the areas near the berms, and the material in the berms was too thick to effectively detect military munitions. • Structures/Latrines There are several structures and latrines in the Seaside MRA. The surface underneath the structures and latrines was inaccessible, and the immediate areas around these buildings could not be surveyed because of interference. • Range 46 Weather Station

Table 4.3-2
Seaside MRA – Removal Activities, Burial Pits, and Special Case Areas

Activity	Summary
	A remote automated weather station (RAWS) was situated on Range 46 during previous removal actions at the Seaside MRA and has since been removed. The ground surface underneath the former RAWS was inaccessible, and the immediate areas around the RAWS could not be geophysically surveyed because of interference. • Debris Piles There are several locations where debris was piled that were inaccessible to the geophysical operations.

Table 4.3-3
Seaside MRA – Burial Pits Containing MEC

Site	Grid	Pit No. *	Type	Description	Qty	Depth (inches bgs)
MRS-SEA 1	**B1B8D5**		UXO	Projectile, 3-inch, mortar, HE, MK I	5	20
	BIB8F7		UXO	Ordnance components	17	18
	B1C7G7		UXO	Projectile, 3-inch, mortar, practice, MK I	1	48
MRS-SEA 2	**B1F9F3**		UXO	Bulk, HE (Model Unknown)	1 pound	24
MRS-SEA 3	**B2I1I9**	**1**	DMM	Fuze, grenade, hand, M10 series	7	8
		2	UXO	Fuze, grenade, hand, M10 series	98	16
MRS-SEA 4	**C2A3D0**		UXO	Grenade, hand, practice, MK II	3	4

Note: * If more than one pit was found in a grid.

Reference: Fort Ord MMRP Database

Please note: Munitions descriptions have been taken directly from the Army's MMRP Database and/or other historical documents. Any errors in terminology, filler type, and/or discrepancies between model number and caliber/size are a result of misinformation from the data sources.

Table 4.3-4
Seaside MRA – Types of MEC Removed and Hazard Classification

Location	MEC Item	UXO	DMM	Hazard Classification
MRS-15 SEA 1	Cap, blasting, electric, M6	0	4	1
	Cartridge, 40mm, practice, M781	0	20	1
	Fuze, grenade, hand, M10 series	0	86	1
	Fuze, grenade, hand, practice, M205 series	0	2	1
	Fuze, grenade, hand, practice, M228	2	3	1
	Fuze, projectile, combination, M1907	1	0	1
	Fuze, projectile, point detonating, M48 series	1	0	2
	Fuze, trench mortar, point detonating, MK VI	1	0	2
	Grenade, hand, fragmentation, MK II	1	0	3
	Grenade, hand, incendiary, TH3, AN-M14	1	0	1
	Grenade, hand, riot, CS, M7A3	1	0	1
	Grenade, hand, smoke, M18 series	5	0	1
	Ordnance Components	19	0	NS
	Projectile, 22mm, subcaliber, practice, M744	1	0	1
	Projectile, 37mm, low explosive, MK I	3	0	3
	Projectile, 3inch, trench mortar, practice, MK I (Stokes)	28	0	1
	Projectile, 40mm, parachute, illumination, M583 series	1	0	1
	Projectile, 4inch, mortar, screening smoke, FM (Stokes)	6	0	3
	Projectile, 4inch, mortar, smoke, HC (Stokes)	4	0	2
	Projectile, 4inch, trench mortar, practice, MK I (Stokes)	5	0	1
	Projectile, 4inch, trench mortar, smoke, white phosphorous, MK I (Stokes)	1	0	3
	Projectile, 75mm, high explosive, MK I	1	0	3
	Projectile, 75mm, Shrapnel, MK I	6	0	3
	Projector, Livens, screening smoke, FM	2	0	3
	Rocket, 35mm, subcaliber, practice, M73	1	0	1
	Signal, ground, rifle, parachute, M17 series	2	0	1
	Signal, illumination, M187	1	0	1
	Simulator, grenade, hand, M116A1	1	0	2
	MRS TOTAL	**95**	**115**	
MRS-15 SEA 2	Bulk, high explosive (model unknown) – 1 pound *	0	0	NS
	Fuze, grenade, hand, M10 series	0	2	1
	Fuze, grenade, hand, practice, M205 series	0	2	1
	Grenade, hand, smoke, M18 series	1	0	1
	Projectile, 3inch, trench mortar, practice, MK I (Stokes)	6	0	1
	Signal, illumination, ground, M125 series	1	0	2
	MRS TOTAL	**8**	**4**	
MRS-15 SEA 3	Cap, blasting, electric, M6	0	1	1
	Fuze, grenade, hand, M10 series	98	10	1
	Fuze, grenade, hand, practice, M205 series	2	0	1
	Fuze, grenade, hand, practice, M228	0	4	1

Location	MEC Item	UXO	DMM	Hazard Classification
	Grenade, rifle, smoke, M22 series	1	0	1
	Projectile, 37mm, high explosive, MK II	1	0	1
	Projectile, 37mm, low explosive, MK I	1	0	3
	Rocket, 3.5inch, practice, M29 series	1	0	0
	Rocket, 35mm, subcaliber, practice, M73	2	0	1
	Signal, ground, rifle, parachute, M17 series	1	0	1
	Signal, illumination, ground, M21A1	1	0	1
	MRS TOTAL	**108**	**15**	
MRS-15 SEA 4	Activator, mine, antitank, practice, M1	0	1	1
	Cap, blasting, non-electric, M7	0	1	1
	Cartridge, ignition, M2 series	39	3	1
	Flare, surface, trip, M49 series	3	0	1
	Fuze, grenade, hand, M10 series	2	12	1
	Fuze, grenade, hand, practice, M228	1	11	1
	Fuze, mine, antitank, practice, M604	0	1	1
	Fuze, mine, combination, M6A1	0	1	1
	Fuze, projectile, point detonating, M503 series	1	0	2
	Grenade, hand, fragmentation, MK II	3	0	3
	Grenade, hand, practice, M30	22	0	1
	Grenade, hand, practice, MK II	32	0	1
	Grenade, hand, smoke, M18 series	1	0	1
	Grenade, rifle, smoke, M22 series	15	0	1
	Mine, antitank, practice, M1	1	0	1
	Ordnance Components	7	0	NS
	Pot, 10lb, smoke, HC, screening, M1	3	0	1
	Primer, igniter tube, M57	2	0	1
	Projectile, 3inch, Hotchkiss	1	0	3
	Projectile, 40mm, high explosive, M386	1	0	3
	Projectile, 57mm, high explosive, M306 series	14	0	3
	Projectile, 60mm, mortar, high explosive, M49 series	2	0	3
	Projectile, 75mm, Shrapnel, MK I	2	0	3
	Projectile, 81mm mortar, high explosive M43 series	1	0	3
	Rocket, 35mm, subcaliber, practice, M73	4	0	1
	Signal, illumination, ground, M125 series	1	0	2
	Simulator, flash artillery, M110	1	0	1
	MRS TOTAL	**159**	**30**	
	SEASIDE MRA TOTAL	**370**	**164**	

Notes: NS = Not Specified.

* = MMRP database identified item as UXO with a quantity of zero.

Reference: Fort Ord MMRP Database.

Please note: Munitions descriptions have been taken directly from the Army's MMRP Database and/or other historical documents. Any errors in terminology, filler type, and/or discrepancies between model number and caliber/size are a result of misinformation from the data sources.

Table 4.3-5
Seaside MRA – Summary of Recovered MEC and MD

Type	Summary
UXO	370 items
DMM	164 items
MD	56,524 pounds (includes MD-E and MD-F items if weights were documented)
Aerial Extent	• The largest concentrations of MEC were located in MRS-15 SEA 4 between Ranges 18 and 46 in the northern portion of the MRA and in MRS-15 SEA 1 in the area of Range 23 and Watkins Gate Road in the southern portion of the MRA. • MEC were also recovered from several discrete locations. • The majority of the grids contained less than 100 pounds of MD. A majority of the grids that contained more than 100 pounds of MD were concentrated in the southwestern portion of Ranges 19, 20, and 59 and in the southern and western portions of Ranges 23 and 23M, respectively.
Vertical Extent	• The MMRP database indicates that the majority of the MEC recovered from the Seaside MRA were found on the surface, within 6 inches bgs, or in seven burial pits.

Table 4.3-6
Seaside MRA – HTW History and Conditions

Location	Summary
MRS-SEA 1 (Parcel E24)	• Remediation at IRP Site 39, Range 21 (HA-21D), was conducted to remove lead, copper, and antimony in soil from spent SAA. The remedial action included the removal of approximately 9,600 cubic yards of affected soil. The average lead concentration of soil remaining in place following remedial activities at Range 21 was 35 milligrams per kilogram (mg/kg). Results of the confirmation sampling indicated that soil with chemical concentrations above target cleanup concentrations was removed. No further action related to munitions constituents (MC) was recommended for HA-21D under the BRA. • The evaluation of HA-112 (MRS-15 SEA 01) included a literature search, a review of the information gathered during the munitions response at the MRA, and a site reconnaissance. No suspect areas outside of the previously identified overlapping HAs were identified during the reconnaissance of the MRA, and no further action related to MC was recommended under the BRA. • The assessment of HA-22D (Range 22) included site reconnaissance and site investigation soil sampling for MC. Site reconnaissance identified targets and areas with concentrations of spent SAA. Soil sample results indicated that lead concentrations were below the Fort Ord maximum background concentration and copper concentrations were below screening levels and under the U.S. EPA residential preliminary remediation goal (PRG). No further action related to MC was recommended for HA-22D under the BRA. • The assessment of HA-23D (Range 23) included site reconnaissance and site investigation soil sampling for MC. Site reconnaissance identified some areas with concentrations of spent SAA. Soil sample results indicated that the lead concentrations were below screening levels under the U.S. EPA Region IX PRG in four of five samples collected. No further action related to MC was recommended for HA-23D under the BRA.
MRS-SEA 2 (Parcel E34)	• Remediation at IRP Site 39 Range 19 (HA-19D) was conducted to remove lead, copper, and antimony in soil from spent SAA. The remedial action included the removal of approximately 1,400 cubic yards of affected soil. Results of the confirmation sampling indicated that soil with chemical concentrations above target cleanup concentrations was removed. No further action related to MC was recommended for HA-19D under the BRA. • The evaluation of HA-113 (MRS-15 SEA 02) included a literature search, review of the information gathered during the munitions response at the MRA, and a site reconnaissance. No suspect areas outside of the previously identified overlapping HAs were identified during the reconnaissance of the MRA, and no further action related to MC is recommended under the BRA. • The assessment of HA-20D (Range 20) included site reconnaissance and site investigation soil sampling for MC. Soil sample results indicated that metals concentrations were below the Fort Ord maximum background concentrations and no further action related to MC was recommended for HA-20D under the BRA. • The evaluation of HA-59D (Range M1) included a literature search, review of the information gathered during the munitions response, and reconnaissance of the site. No targets, spent ammunition, or other MEC-related items were observed, and no further action related to MC was recommended for HA-59D under the BRA.
MRS-SEA 3 (Parcel E23.1)	• Remediation at IRP Site 39, Range 18 (HA-18D), was conducted to remove lead, copper, and antimony in soil from spent SAA. The remedial action included the removal of approximately 24,900 cubic yards of affected soil. Results of the confirmation sampling indicated that soil with chemical concentrations above target cleanup concentrations was removed. No further action related to MC was recommended for HA-18D under the BRA. • The evaluation of HA-114 (MRS-15 SEA 03) included a literature search and review of

Table 4.3-6
Seaside MRA – HTW History and Conditions

Location	Summary
	the information gathered during the munitions response at the site. Based on the limited number of items identified during the munitions response, no further action related to MC was recommended for HA-114 under the BRA.
MRS-SEA 4 (Parcel E23.2)	• Remediation at IRP Site 39, Ranges 18 and 46 (HA-18D and HA-46D), was conducted to remove lead, copper, and antimony in soil from spent SAA. The remedial action at Range 18 included the removal of approximately 24,900 cubic yards of affected soil. Results of the confirmation sampling indicated that soil with chemical concentrations above target cleanup concentrations was removed. No further action related to MC was recommended for HA-18D under the BRA. • The remedial action at Range 46 included the removal of approximately 3,900 cubic yards of affected soil. The average lead concentration of soil remaining in place following remedial activities at Range 46 was 26 mg/kg. Results of the confirmation sampling indicated that soil with chemical concentrations above target cleanup concentrations was removed. No further action related to MC was recommended for HA-46D under the BRA. • The assessment of HA-48D (Range 48) included site reconnaissance and site investigation soil sampling for MC. Soil sample results indicated that metals concentrations exceeded the Fort Ord maximum background concentrations, but were below cleanup levels. Because sample results were below cleanup levels, no further action related to MC was recommended for HA-48D under the BRA. • The evaluation of HA-115 (MRS-15 SEA 04) included a literature search, review of the information gathered during the munitions response at the site, and a site reconnaissance. No suspect areas outside of the previously identified overlapping HAs were identified during the reconnaissance of the site, and no further action related to MC is recommended under the BRA. • The evaluation of HA-50D (Booby Trap Range) included a literature search and reconnaissance of the site. Blank casings, 50-caliber links, and concrete debris were found. No targets, fighting positions, or other MEC-related items were observed, and no further action related to MC was recommended for HA-50D under the BRA.

Reference: Army 2007

Table 4.4-1
Seaside MRA - Future Land Use by Parcel

USACE Parcel Number	MRS Number	Land Use Category	Description	Acreage
E24	MRS-15 SEA 1	Development	Residential - Single Family	108
E24	MRS-15 SEA 1	Development	Road and Inland Range Buffer	74
E24	MRS-15 SEA 1	Development	Residential - Single Family	16
E34	MRS-15 SEA 2	Development	Residential - Single Family	48
E34	MRS-15 SEA 2	Development	Road and Inland Range Buffer	40
E34	MRS-15 SEA 2	Development	Residential - Single Family	9
E23.1	MRS-15 SEA 3	Development	Residential - Single Family	42
E23.1	MRS-15 SEA 3	Development	Road and Inland Range Buffer	6
E23.2	MRS-15 SEA 4	Development	Residential - Single Family	65
E23.2	MRS-15 SEA 4	Development	Inland Range Buffer	11
			MRA TOTAL	**419**

Table 4.5-1
Seaside MRA – Ecological Information

Type	Summary
Biological	• Dominant vegetation in the area is central maritime chaparral with patches of non-native grassland. Central maritime chaparral consists of variable sclerophyllous (hard-leaved) shrub communities within a scrub-live oak forest region that is best developed on sandy soils within the summer fog zone. This type of chaparral is considered rare by the CDFG and is declining statewide. Development has now limited the majority of this community type in the Monterey Bay Area to undeveloped portions of Fort Ord. As identified in the HMP, a number of species could be found on the Seaside MRA.
Habitat Management Plan/ Biological Opinions	• The USFWS BO required that an HMP be developed and implemented to reduce the incidental take of listed species and loss of habitat that supports these species. The HMP for former Fort Ord complies with the USFWS BO and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival. The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. • To maintain compliance with habitat management and monitoring requirements presented in the HMP, biological resources are monitored after MEC removal activities have been completed. The HMP specifies mitigation measures to monitor the successful regeneration of species and habitat following removal of MEC. Monitoring includes conducting follow-up monitoring for a period of 5 years after MEC removal to document habitat conditions. Since the inception of the MEC removal program, the Army had elected to augment the monitoring program, where feasible, to include the collection of baseline data prior to MEC removal. Baseline data have been collected to provide additional information on preexisting species composition and distribution of herbaceous annual sensitive species. Both baseline and follow-up data are used to compare community regeneration to HMP success criteria. • The HMP identifies the area as development and habitat reserve with borderland development areas along an NRMA interface (Figure 4.5-1). The NRMA separates the development category land from the adjacent habitat reserve area. The NRMA and habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and minimize impacts to listed species. • FORA will implement the mitigation requirements identified in the HMP in accordance with the BO developed during formal consultation between the Army and the U. S. FWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP. For borderland areas, FORA will follow best management practices while conducting work to prevent the spread of exotic species, limit erosion, and limit access to the NRMA. • Since April 1997, a number of BOs have been issued that are relevant to MEC remediation activities (USFWS 1999, 2002, 2005). Future MEC remediation is required to be consistent with the applicable conservation measures.

Table 4.5-1
Seaside MRA – Ecological Information

Type	Summary
Threatened and Endangered Species	• Special-status biological resources are those resources, including plant, wildlife, and native biological communities, that receive various levels of protection under local, state, or federal laws, regulations, or policies. The closure and disposal of former Fort Ord is considered a major federal action that could affect several species proposed for listing or listed as threatened or endangered under the federal ESA. • Plant species identified at the former Fort Ord that are either threatened or endangered include Contra Costa goldfields (endangered), sand gilia (endangered), and Monterey spineflower (threatened). • In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. As shown on Figure 4.5-2, it is possible the CTS may be found in the MRS-15 SEA 1 and MRS-15 SEA 2 as they lie within 2 km of an aquatic feature that is likely to have a presence of CTS. • Seaside MRA is identified within the HMP to require special management for the boundaries between developed areas and the NRMA. The requirements have both interim and long-term maintenance implications. As presented in the HMP, with the exception of boundary management requirements, the Seaside MRA is available for development without restrictions although future landowners will still be required to comply with environmental laws enforced by the federal, state, and local agencies, including the ESA.

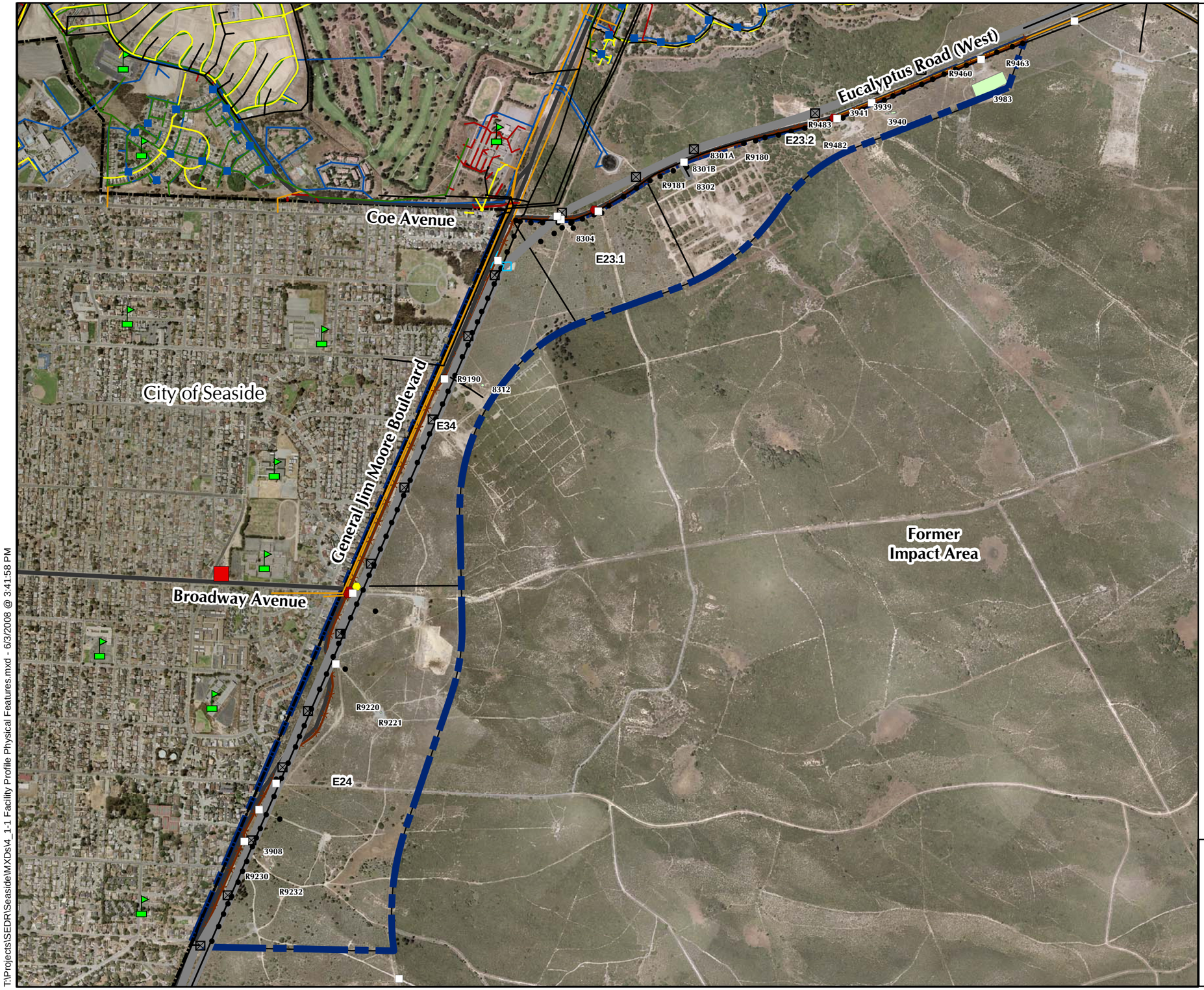
Table 4.5-2
Seaside MRA - HMP Category by Parcel and Possible Occurrence of HMP Species

USACE Parcel Number	HMP Designated Use	HMP Species
E24	Development (includes residential and a borderland buffer along the NRMA Interface)	sand gilia; Monterey spineflower; Seaside Bird's beak; toro manzanita; sandmat manzanita; Monterey ceanothus; Eastwoods ericameria, coast wallflower; California black legless lizard; California tiger salamander
E34	Development (includes residential and a borderland buffer along the NRMA Interface)	sand gilia; Monterey spineflower; sandmat manzanita; Monterey ceanothus; Eastwoods ericameria, California black legless lizard; California tiger salamander
E23.1	Development (includes residential and a borderland buffer along the NRMA Interface)	sandmat manzanita; Monterey ceanothus; Eastwoods ericameria, California black legless lizard
E23.2	Development (includes residential and a borderland buffer along the NRMA Interface)	Monterey spineflower; sandmat manzanita; Monterey ceanothus; Eastwoods ericameria, California black legless lizard

Reference: USACE 1997b

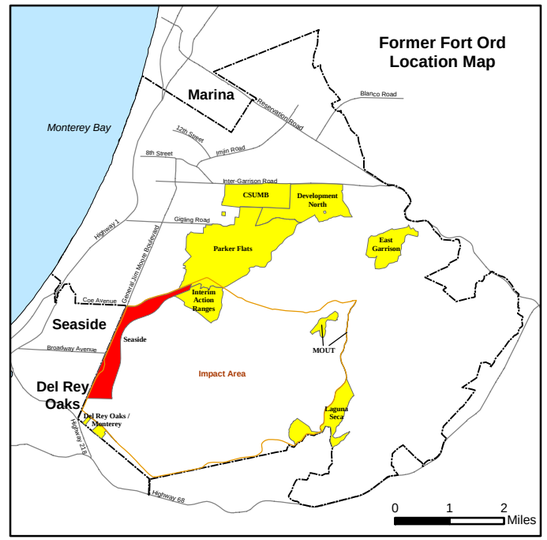
Table 4.6-1
Seaside MRA – Potential Receptors and Exposure Media

Potential Receptor	Exposure Media			Exposure Media		
	Current	Ground Surface	Below Grade	Future	Ground Surface	Below Grade
Construction Workers	✓	✓	✓	✓	✓	✓
Utility Workers	✓	✓	✓	✓	✓	✓
Trespassers	✓	✓		✓	✓	
Firefighters	✓	✓	✓	✓	✓	✓
Emergency Response Workers	✓	✓		✓	✓	
Ancillary Workers	✓	✓	✓	✓	✓	✓
Residents				✓	✓	✓
Recreational Users				✓	✓	✓



Legend

- School
- Fire Station
- Gate
- Entry Forbidden Sign
- Sign
- Hydrant
- High-Power Transmission Line Tower
- Electrical Line Pole
- Former Fort Ord Boundary
- Munitions Response Area
- Major Road
- Electrical Line
- Fence
- Gas Line
- Storm Line
- Telephone Line
- Water Line
- Sewer Line
- High-Power Transmission Line and Right of Way
- Aquifer Storage and Recovery Well
- R9211 Structure
- E23.1 USACE Parcel



N

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Seaside MRA Facility Profile Physical Features

FORA ESCA RP
Monterey County, California

Figure 4.1-1

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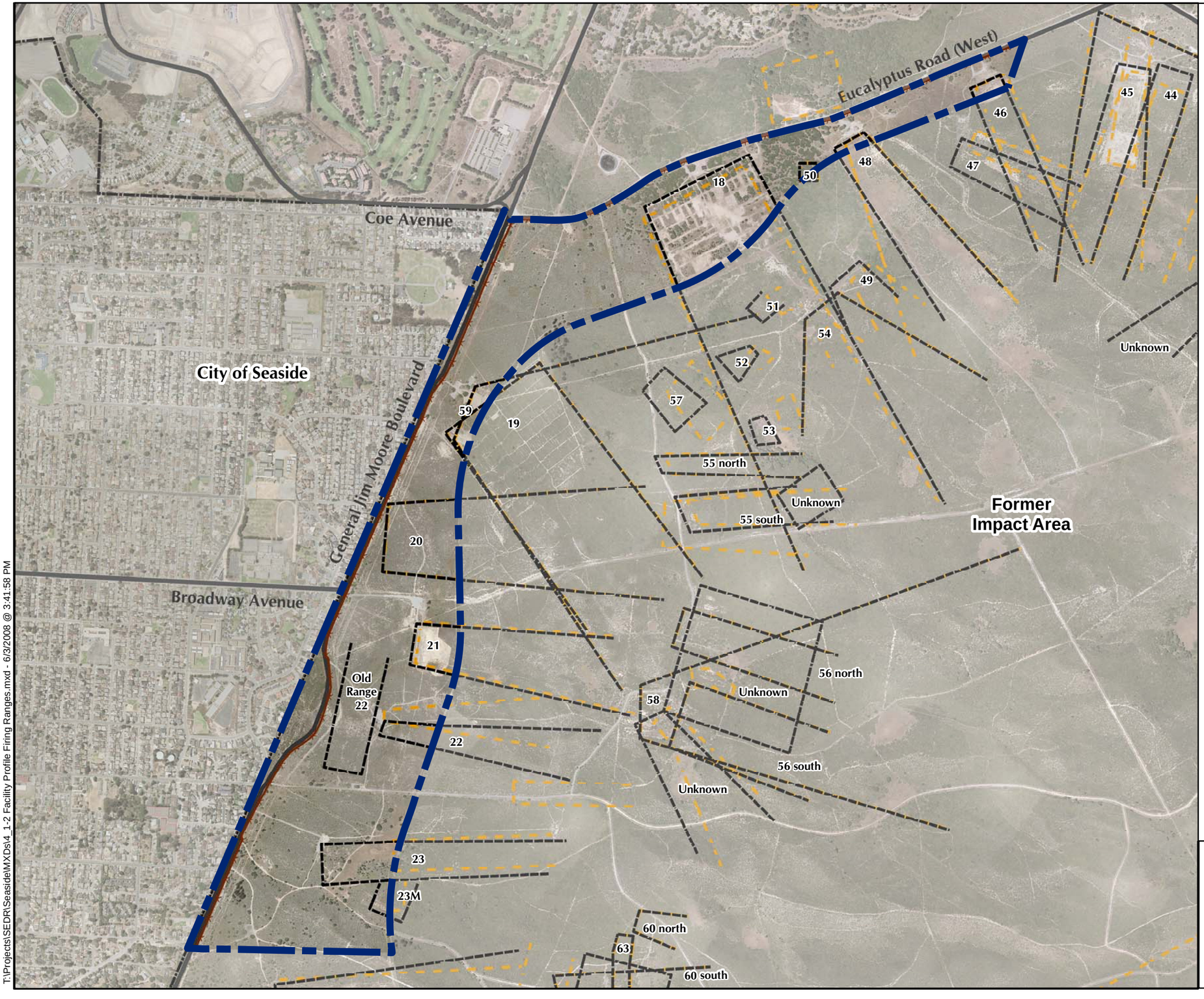
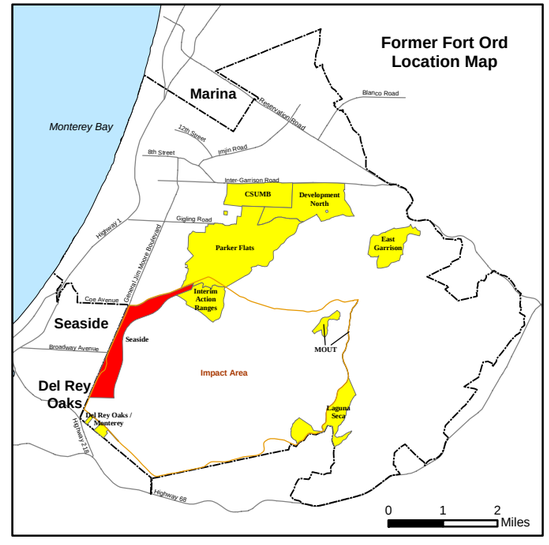


Legend

- Munitions Response Area
- 42 Firing Range
- Historical Range
- Major Road
- Fence
- Former Fort Ord Boundary

Note: Ranges 18, 19, 21, 22, 46 and 59 were reportedly used for small arms ammunition training only.



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Seaside MRA Facility Profile
Ranges and Training Sites

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Monterey County, California

Figure 4.1-2

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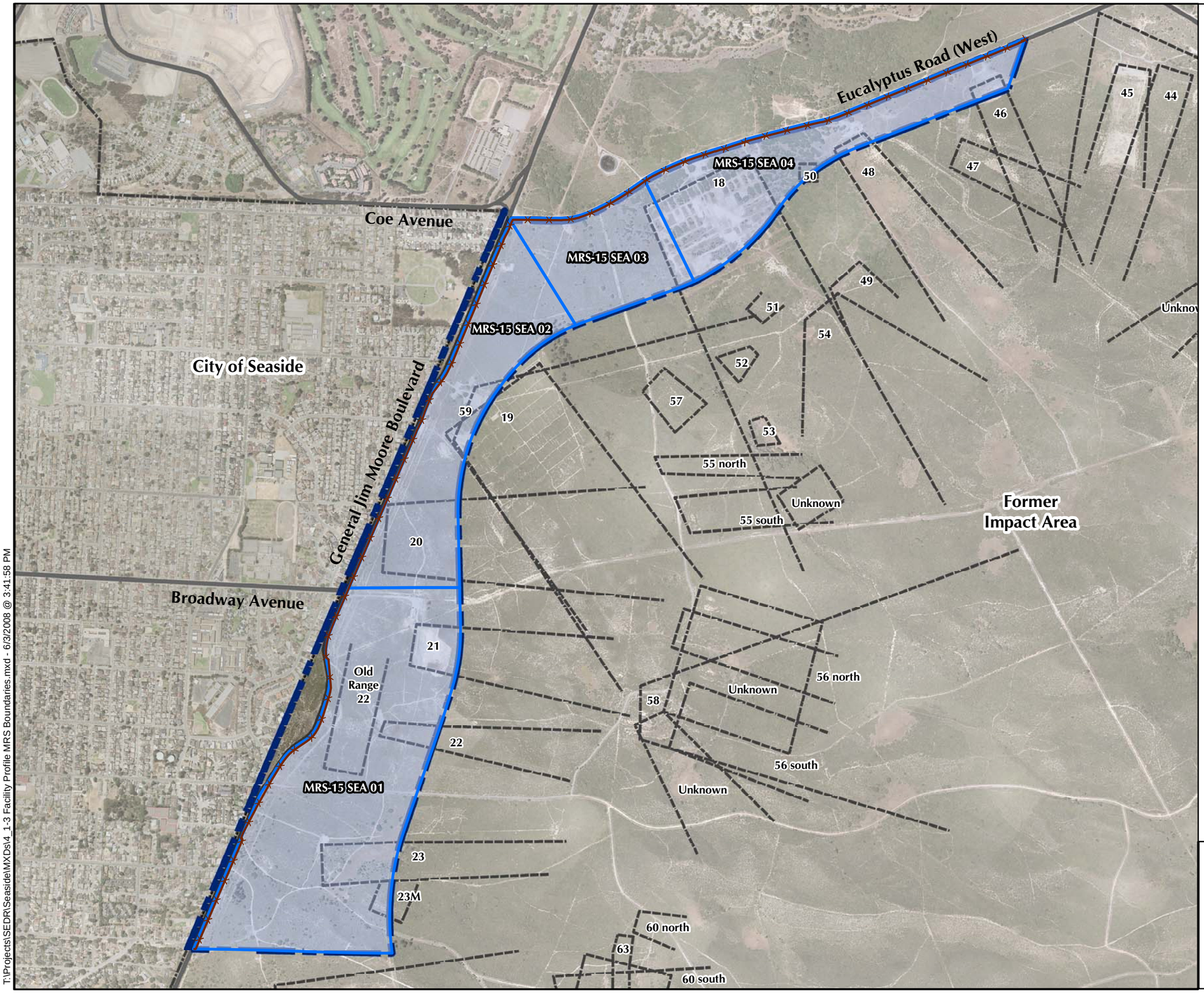
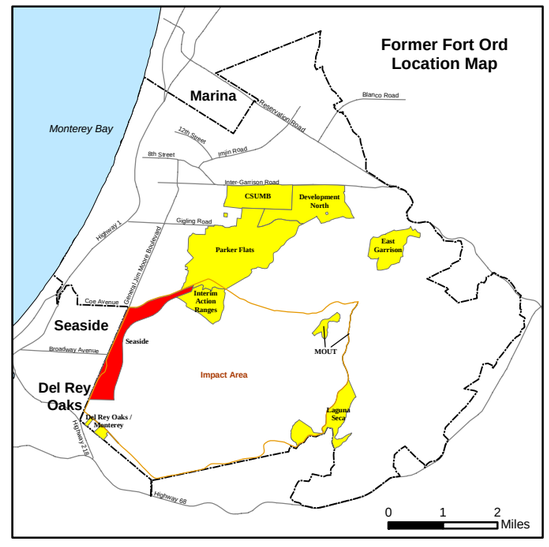
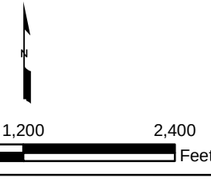


Legend

- Munitions Response Area
- Major Road
- Fence
- 51 Firing Range
- Former Fort Ord Boundary
- MRS-15-SEA 02 Munitions Response Site





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Seaside MRA Facility Profile
Munitions Response Site Boundaries

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Monterey County, California

Figure 4.1-3

Eucalyptus Road (West)

Coe Avenue

General Jim Moore Boulevard

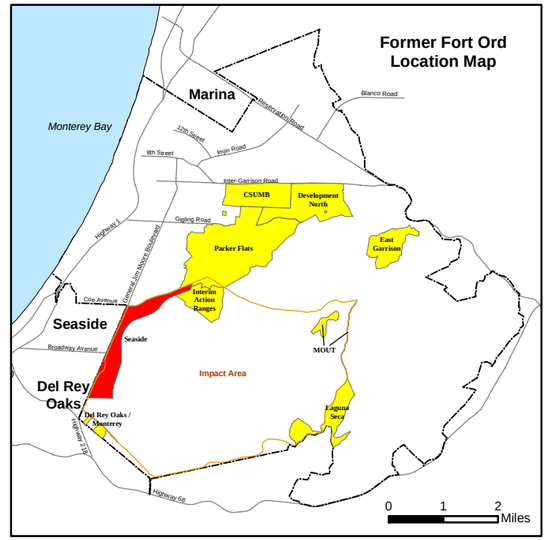
Broadway Avenue

Legend

- Environmental Well
- Abandoned Well
- Water Supply Well
- Aquifer Storage and Recovery Well
- 540 Topography 5 ft and 10 ft
- Munitions Response Area
- Major Road
- Former Fort Ord Boundary

Soil Type

- Arnold-Santa Ynez Complex
- Baywood Sand, 2 to 15 Percent Slopes
- Oceano Loamy Sand, 2 to 15 Percent Slopes



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Seaside MRA Physical Profile Topography and Soil Type

FORA ESCA RP
Monterey County, California

Figure 4.2-1

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Eucalyptus Road (West)

Coe Avenue

E23.2

E23.1

City of Seaside

General Jim Moore Boulevard

E34

Broadway Avenue

E24

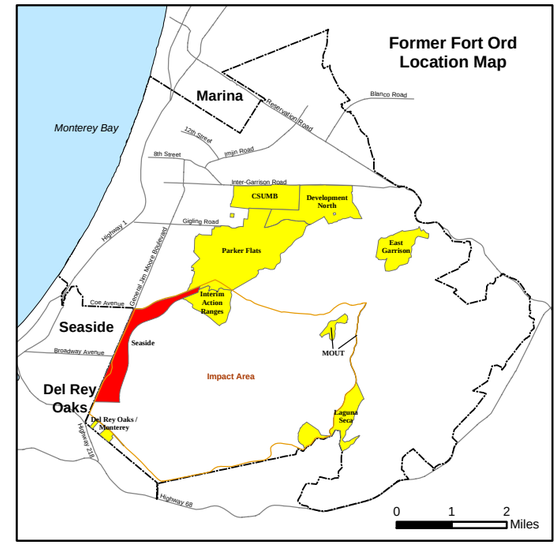
Legend

- Munitions Response Area
- Major Road
- Former Fort Ord Boundary
- E23.1 USACE Parcel

Vegetation Type

- Grassland
- Maritime Chaparral
- Coastal Coast Live Oak Woodland
- Developed / Disturbed

Source: Flora and Fauna Baseline Study of Fort Ord, California, Jones and Stokes Association Inc., December 1992.



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Seaside MRA Physical Profile
Generalized Vegetation Communities

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Monterey County, California

Figure 4.2-2

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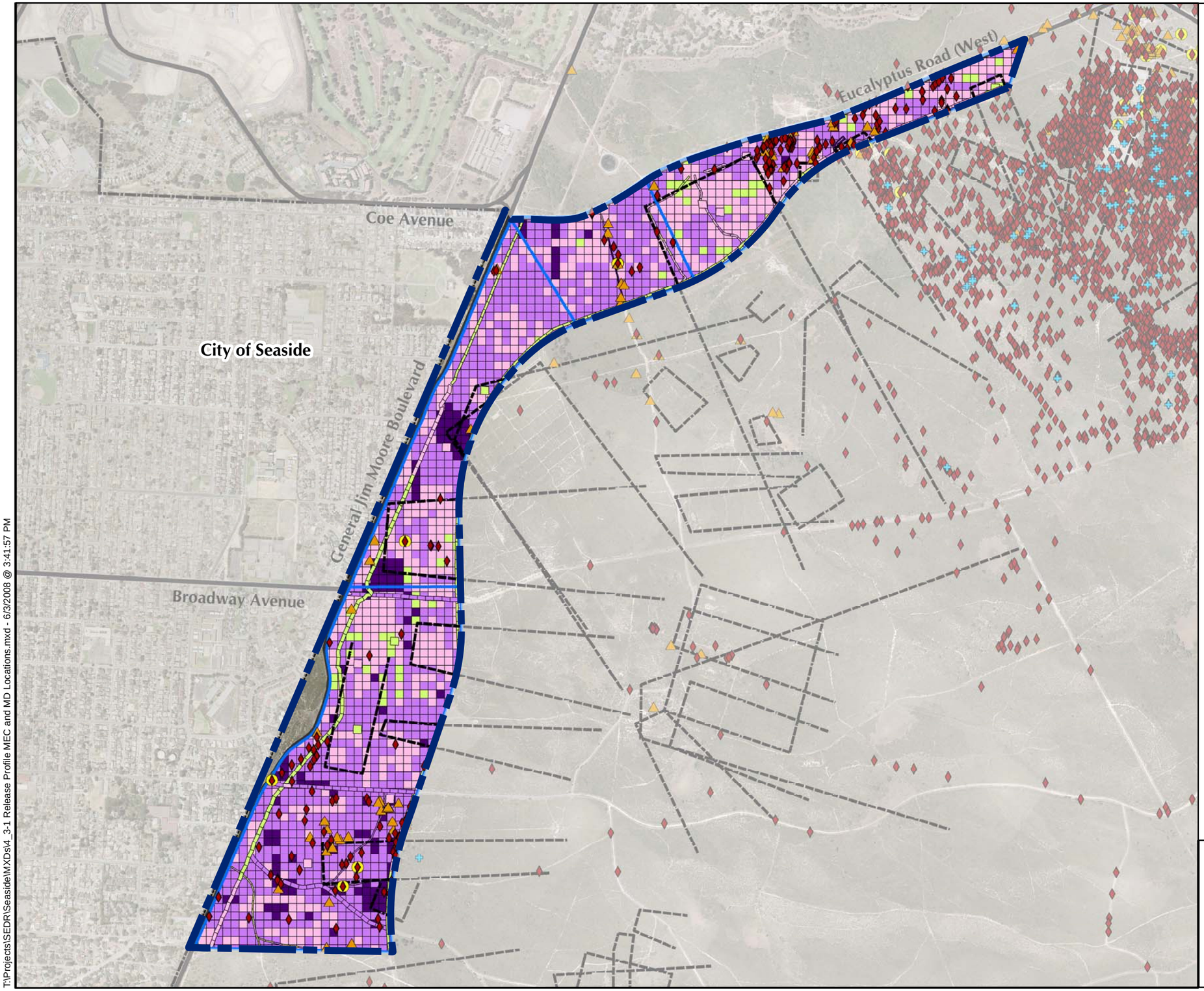


Legend

- Munitions Response Area
- Firing Range
- Munitions Response Site
- Major Road
- Former Fort Ord Boundary

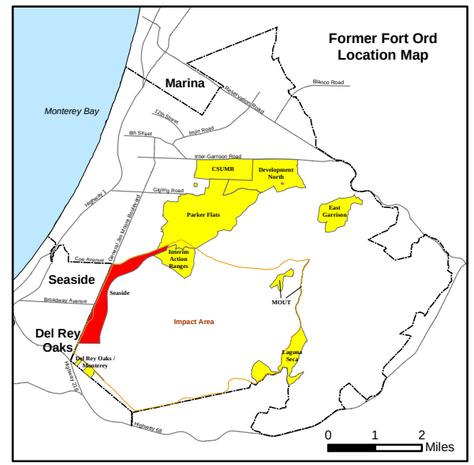
MEC Type

- Unexploded Ordnance (UXO)
- Discarded Military Munition (DMM)
- Insufficient Data (ISD)
- Burial Pit Containing MEC

Munitions Debris (MD) by Weight (total pounds per grid)

- No Data
- 0
- < 10
- 10 to 100
- > 100

Note: Munitions Debris (MD) includes scrap related to small arms ammunition.



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Seaside MRA Release Profile MEC and MD Locations

FORA ESCA RP
Monterey County, California

Figure 4.3-1

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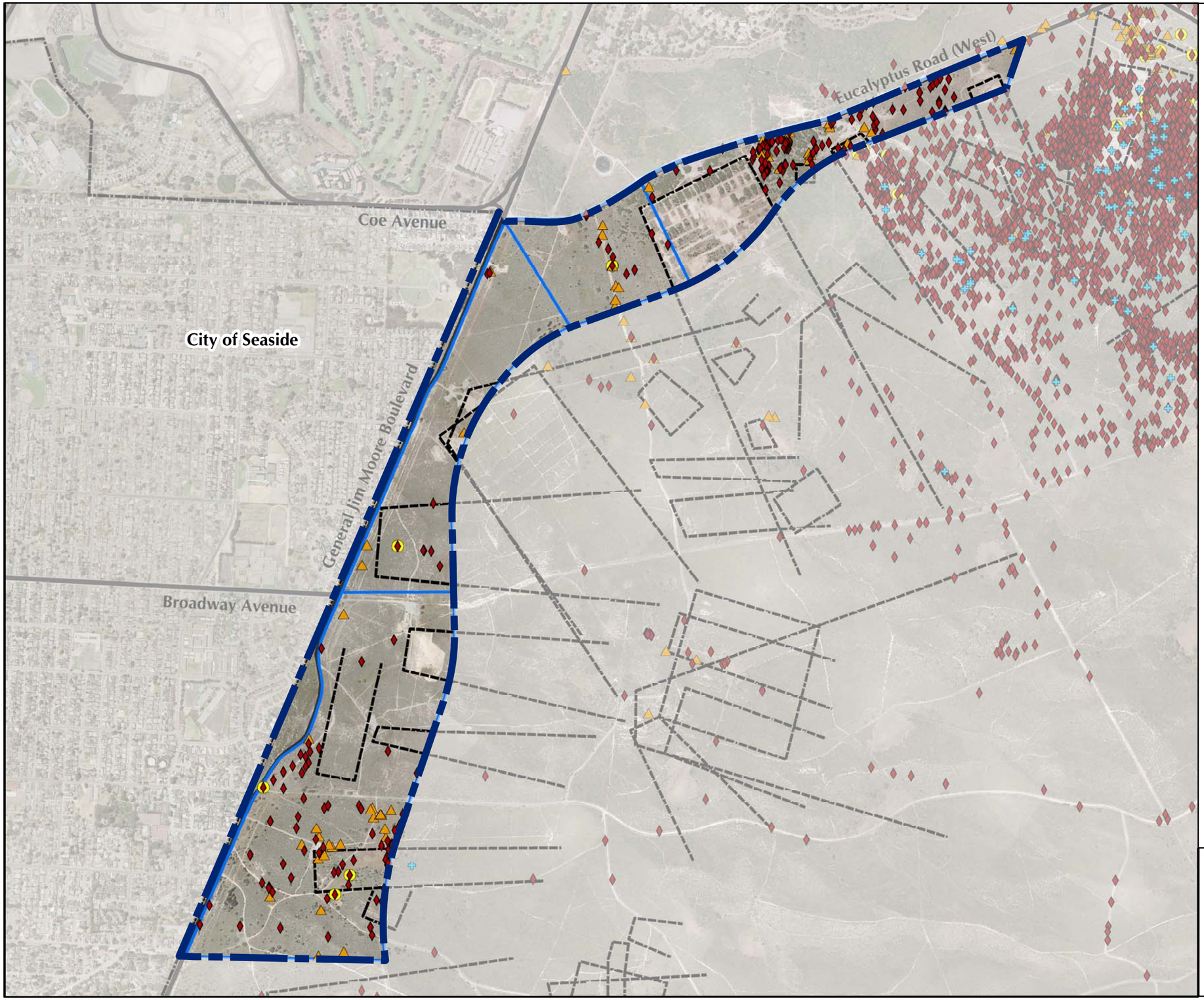


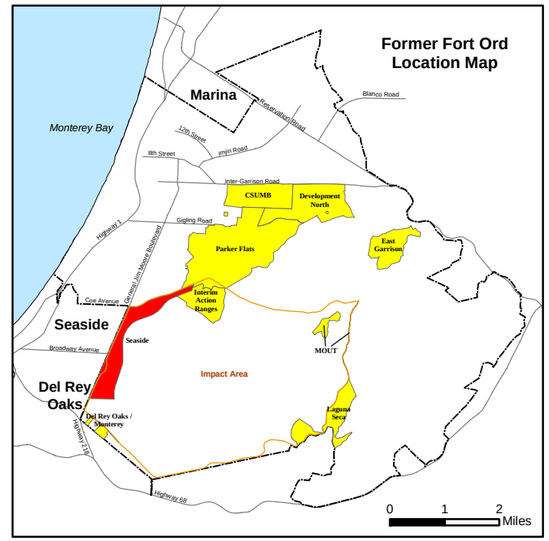
Legend

- Munitions Response Area
- Munitions Response Site
- Firing Range
- Major Road
- Former Fort Ord Boundary

MEC Type

- Unexploded Ordnance (UXO)
- Discarded Military Munition (DMM)
- Insufficient Data (ISD)
- Burial Pit Containing MEC

Note: MEC locations may include more than one item.



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Seaside MRA Release Profile MEC Locations

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Monterey County, California

Figure 4.3-2

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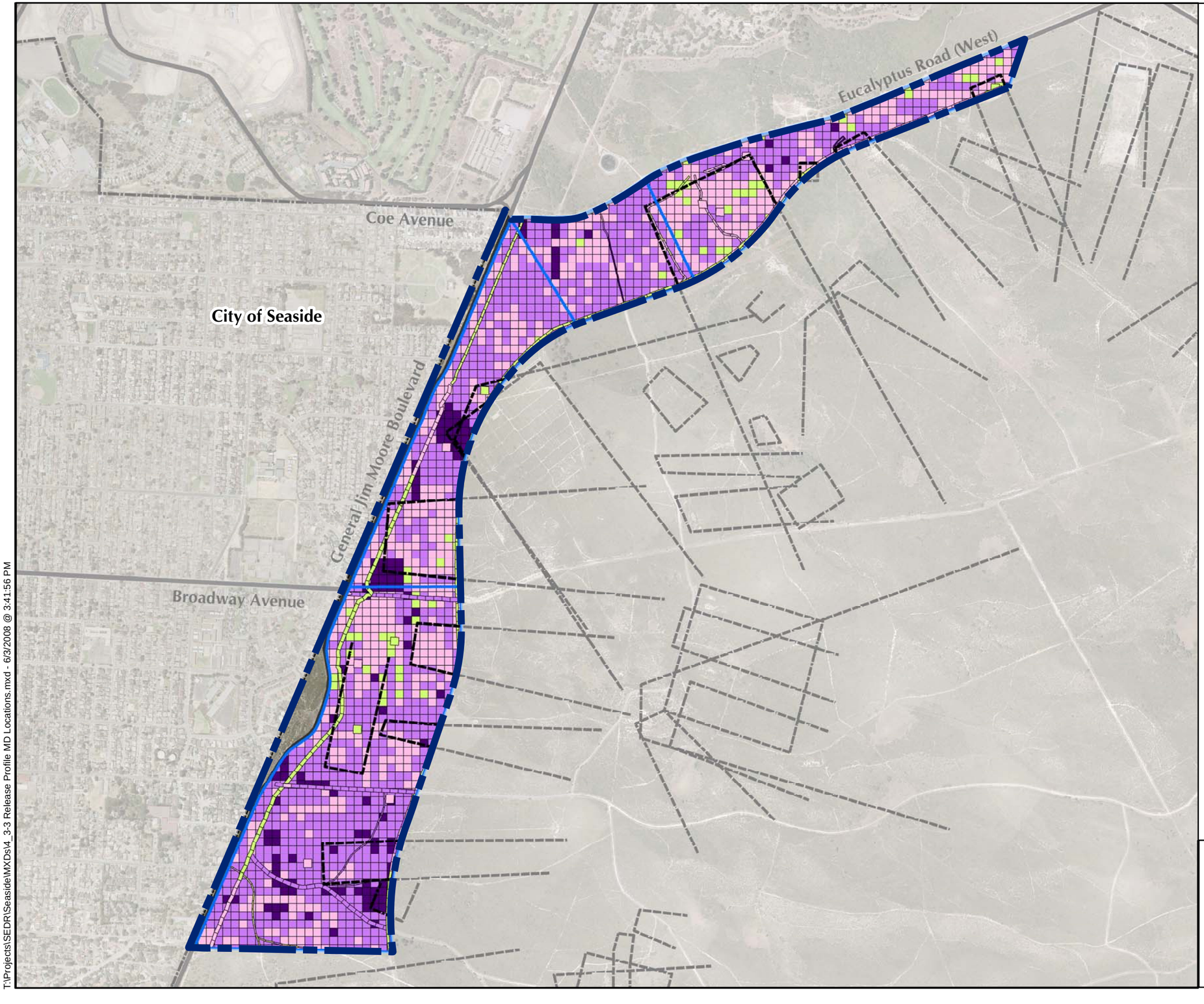


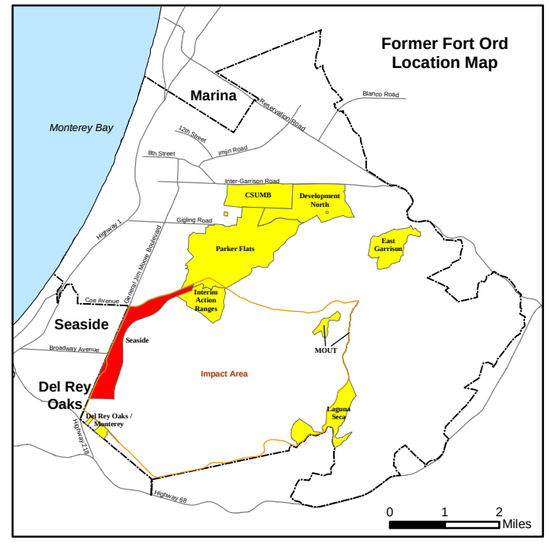
Legend

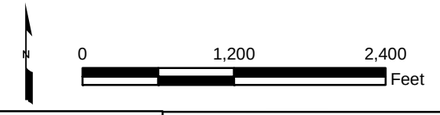
- Munitions Response Area
- Munitions Response Site
- Firing Range
- Major Road
- Former Fort Ord Boundary

Munitions Debris (MD) by Weight (total pounds per grid)

- No Data
- 0
- < 10
- 10 to 100
- > 100

Note: Munitions Debris (MD) includes scrap related to small arms ammunition.





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Seaside MRA Release Profile MD Locations

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Monterey County, California

Figure 4.3-3

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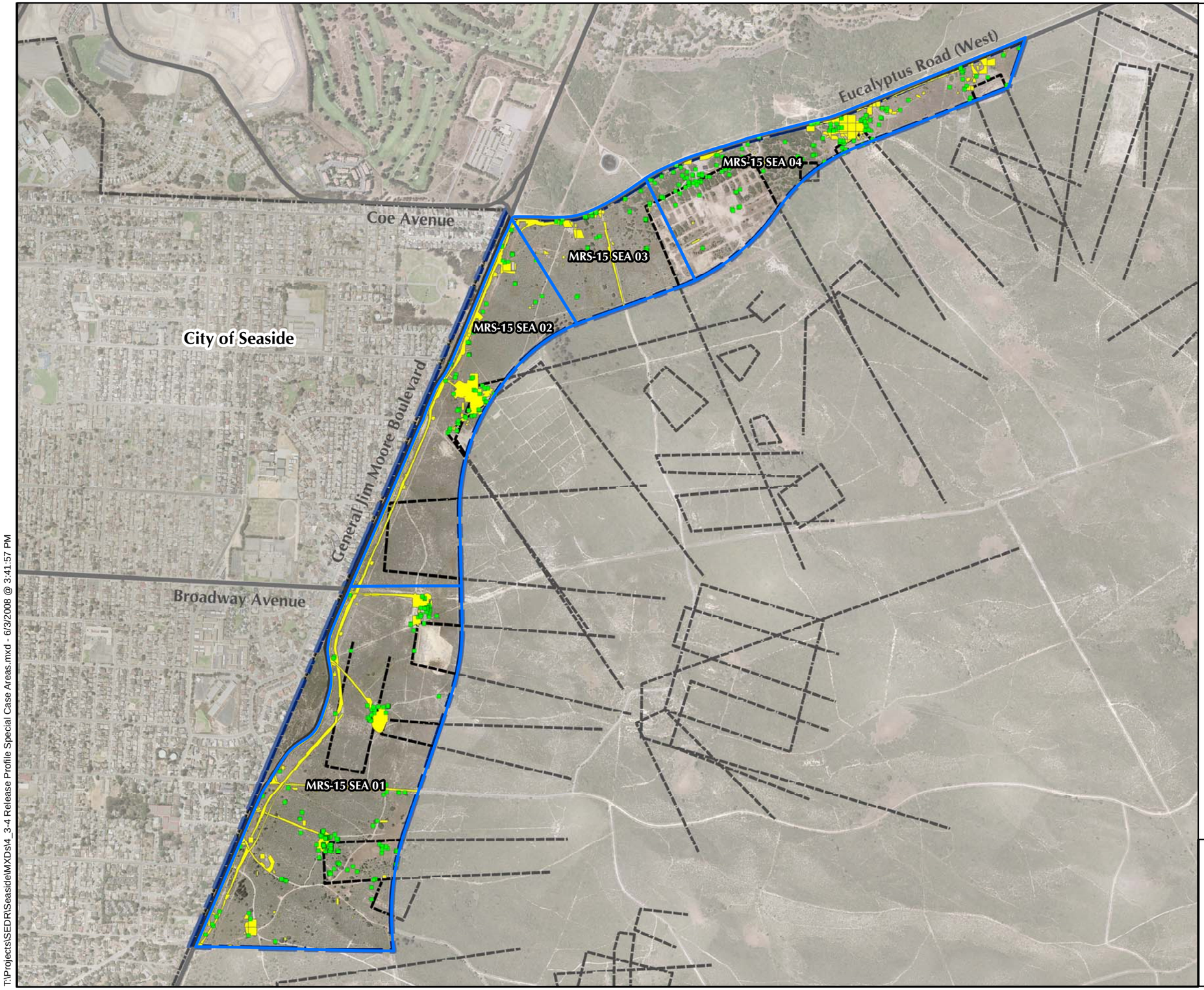
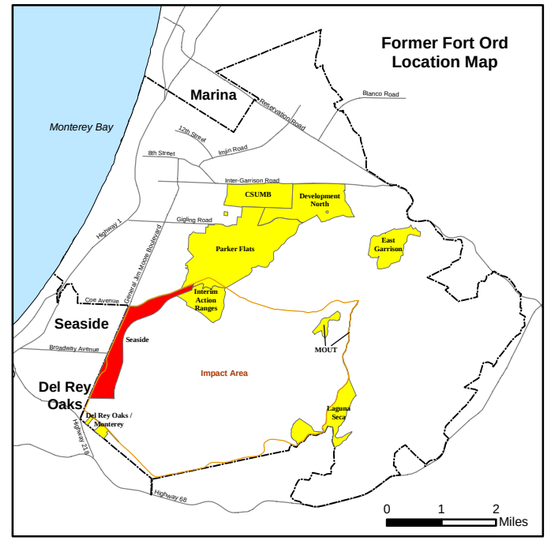


Legend

- Munitions Response Area
- Munitions Response Site
- Firing Range
- Major Road
- Former Fort Ord Boundary
- Special Case Area Point
- Special Case Area



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Seaside MRA Release Profile Special Case Areas

FORA ESCA RP
Monterey County, California

Figure 4.3-4

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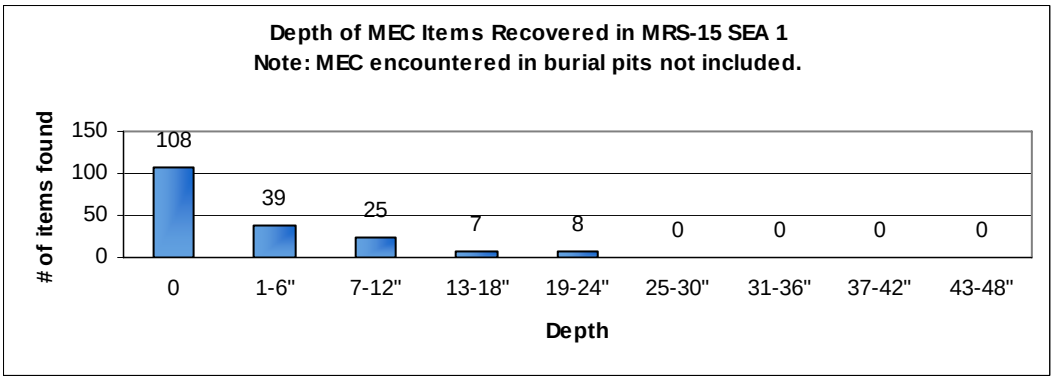

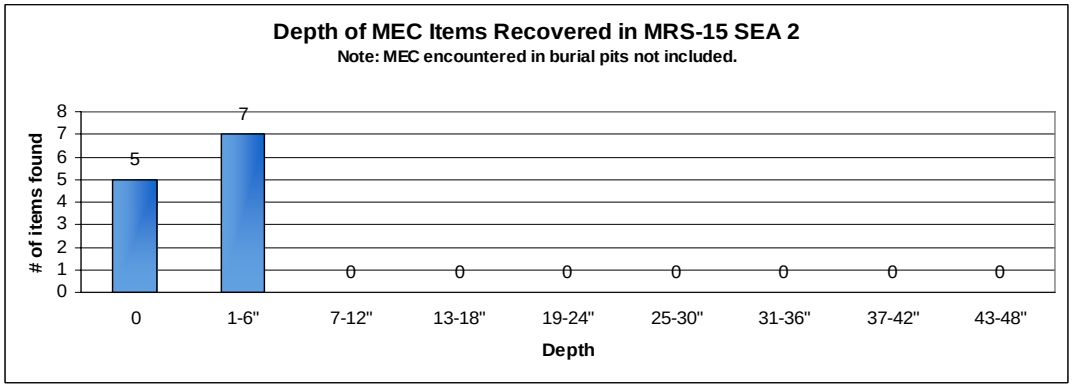

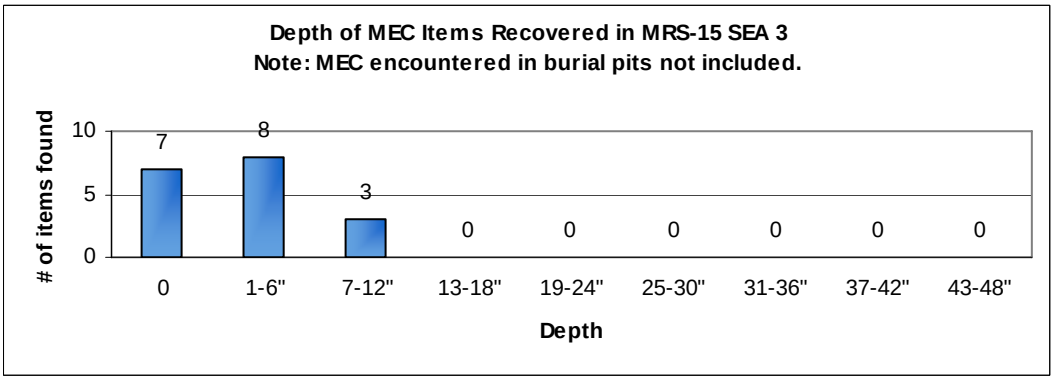

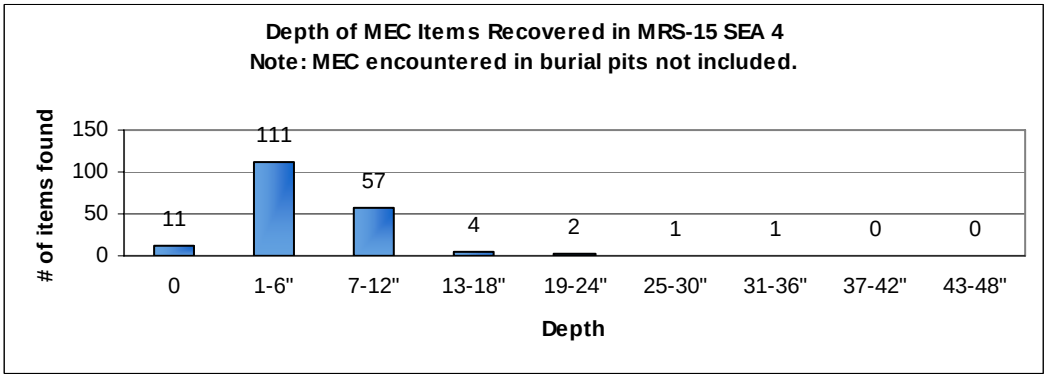

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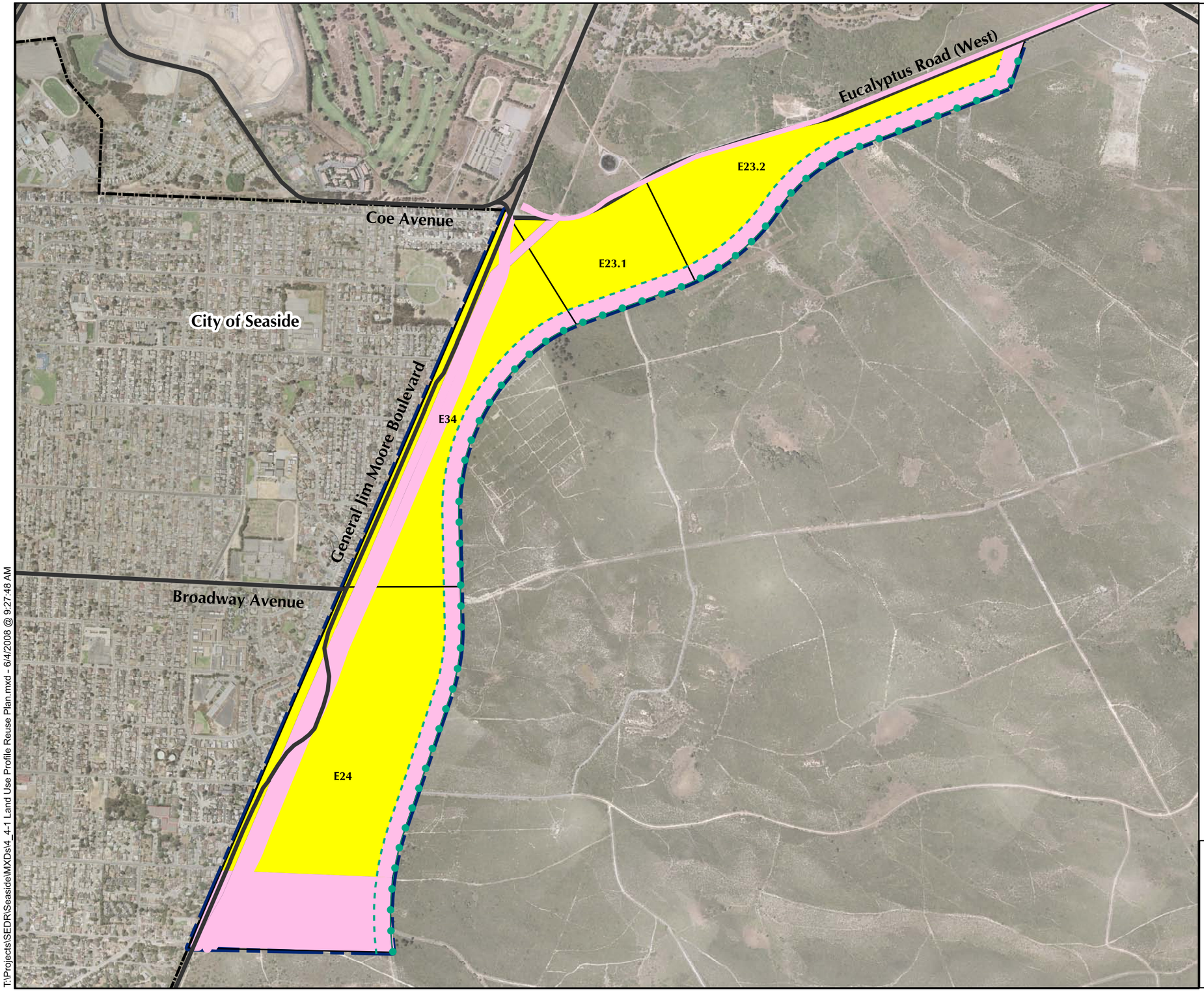
Seaside MRA
Distribution of MEC Recovered by Depth Interval

FORA ESCA RP
Monterey County, California

Figure 4.3-5

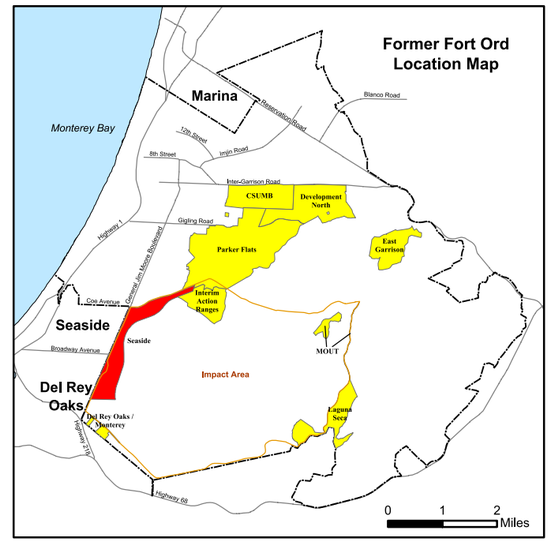


Legend

- Munitions Response Area
- Major Road
- Former Fort Ord Boundary
- E23.1 — USACE Parcel

Future Land Use

- Residential
- Non-Residential
- Habitat Reserve
- Borderland Interface
- 200-Foot Buffer from Borderland Interface



N

0 1,200 2,400 Feet

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WESTON SOLUTIONS
Westcliffe Engineers, Inc.

Seaside MRA Land Use Profile Reuse Plan

FORA ESCA RP
Monterey County, California

Figure 4.4-1

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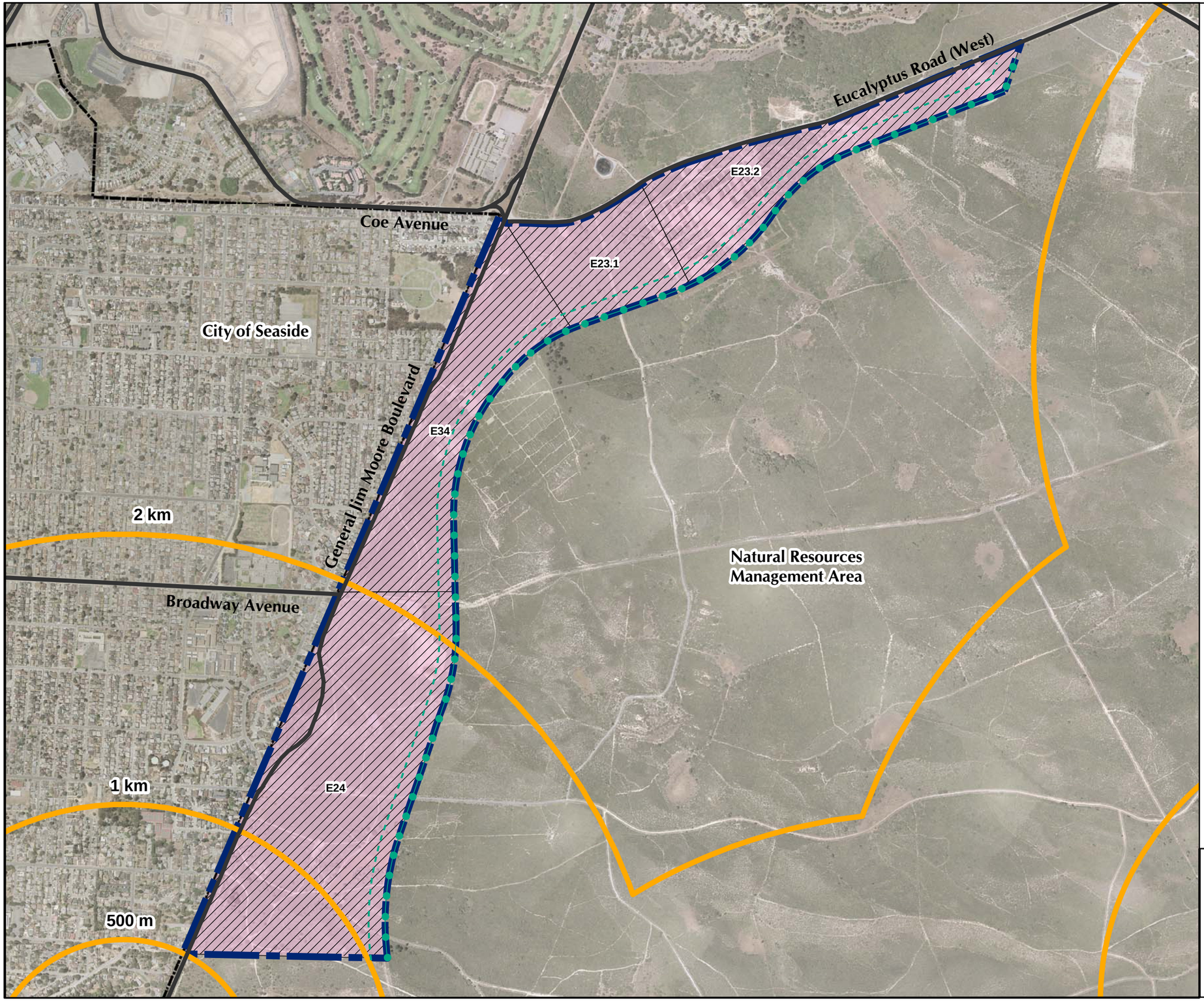
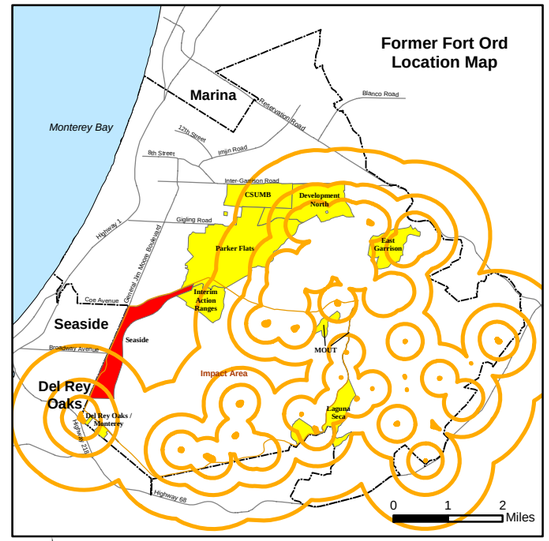


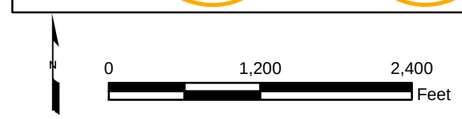
Legend

- Munitions Response Area
- California Tiger Salamander Buffer
- Major Road
- Former Fort Ord Boundary
- Borderland Interface
- 200-Foot Buffer from Borderland Interface
- Aquatic Features

Habitat Management Plan Category

- Development (includes future Residential and Non-Residential areas)
- Development with Reserve or Restrictions
- Habitat Corridor
- Habitat Corridor with Development
- Habitat Reserve





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Seaside MRA Ecological Profile Habitat Type

FORA ESCA RP
Monterey County, California

Figure 4.5-1

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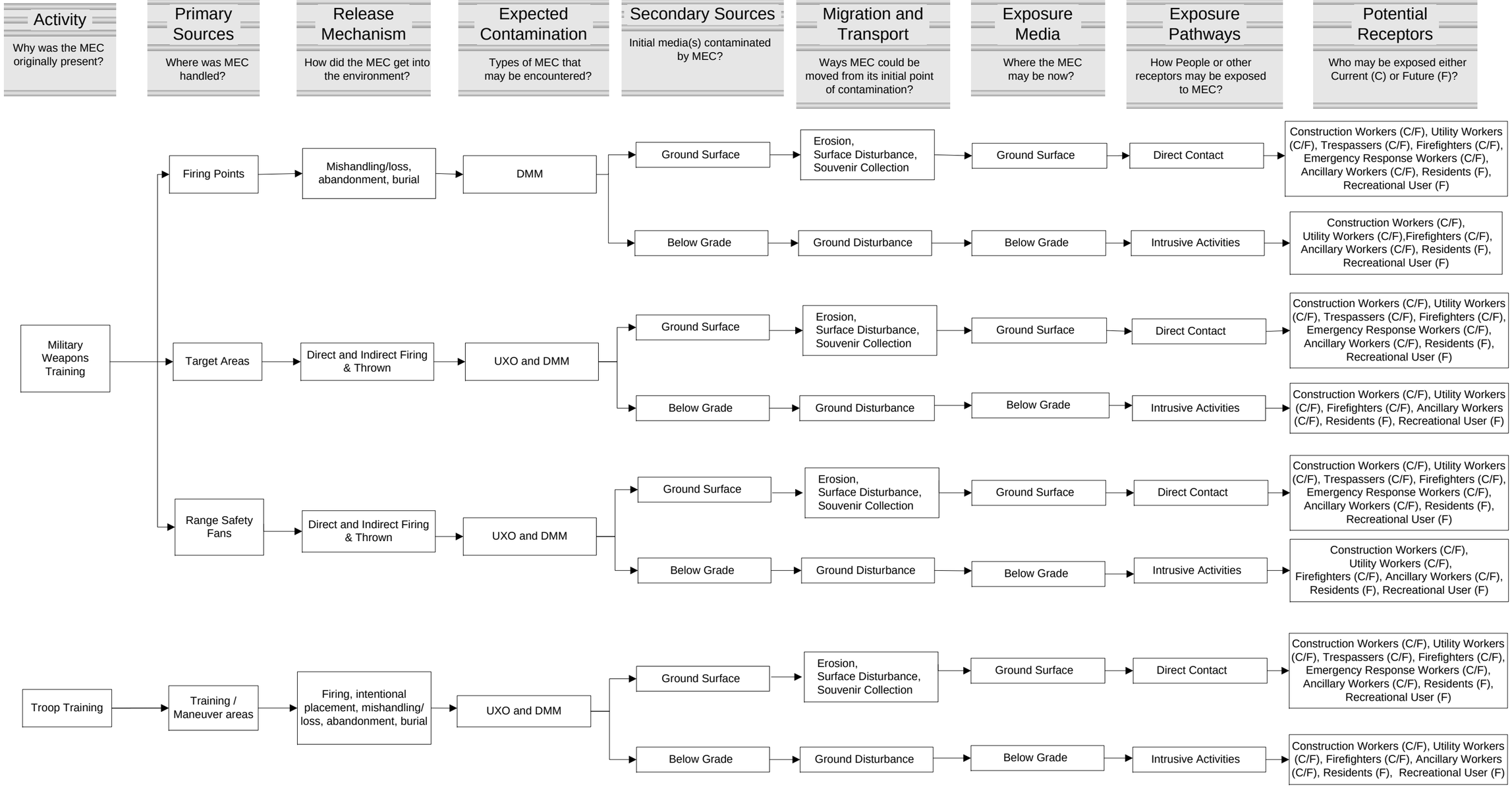

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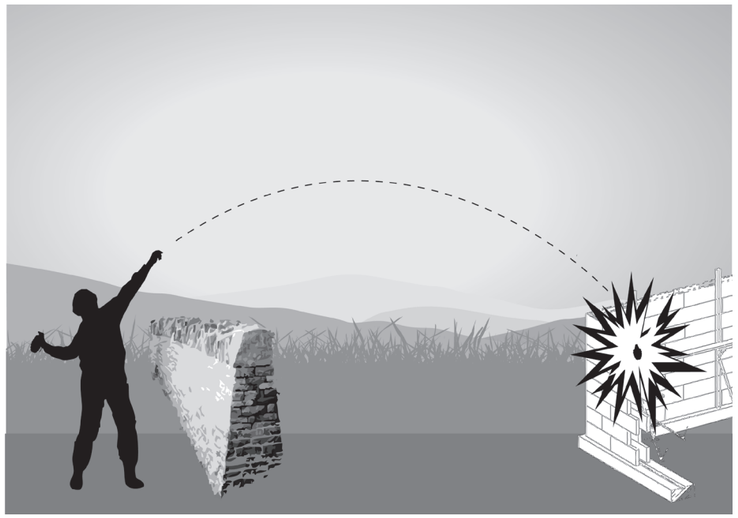
Seaside MRA
Pathway Analysis
Flowchart

FORA ESCA RP
Monterey County, California

Figure 4.6-1



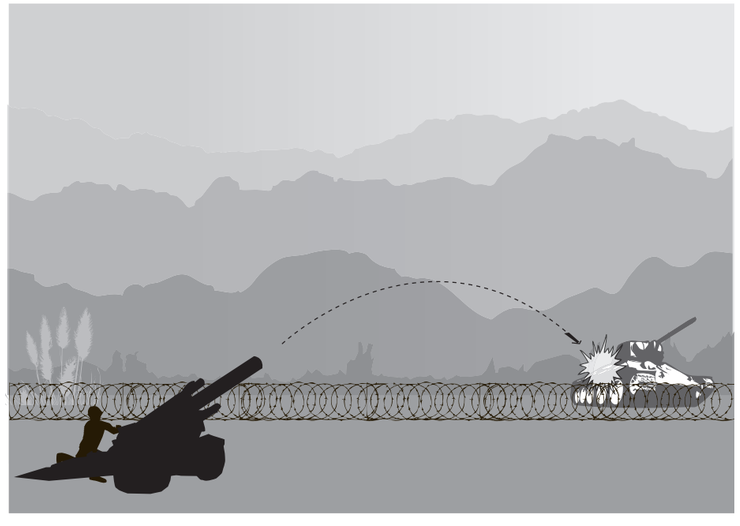
Thrown Ordnance

Burial / Mishandling / Loss

Firing

Direct Fire

Indirect Fire



Indirect Fire

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Seaside MRA
Release Mechanism Illustrations

FORA ESCA RP
Monterey County, California

Figure 4.6-2

APPENDIX B

Parker Flats MRA Conceptual Site Model

5.0 PARKER FLATS MRA CONCEPTUAL SITE MODEL

The Parker Flats MRA CSM profiles are based on existing information and data provided by the Army and contained in the Fort Ord Administrative Record. Tables and figures associated with the Parker Flats MRA are located at the end of Section 5.0.

The Army completed a Track 2 Munitions Response RI/FS ("Track 2 RI/FS") for a portion of the Parker Flats MRA (MACTEC 2006). For the purpose of this CSM, the Parker Flats MRA is divided into two parts: Parker Flats MRA Phase I and Parker Flats MRA Phase II (Figure 5.1-1). The area included in the Track 2 RI/FS is referred to in this document as the Parker Flats MRA Phase I, which has a Proposed Plan and a pending ROD. The proposed remedy for the Parker Flats MRA Phase I is land use controls (LUCs). Five-year reviews would also be required for this area. The Parker Flats MRA Phase II portion is addressed in this CSM.

5.1 Parker Flats MRA Facility Profile

The facility profile provides information on location, physical boundaries, roadways and access, structures and utilities, historical military use, and administrative controls associated with the MRA.

5.1.1 Boundaries and Access

The Parker Flats MRA is located in the central portion of the former Fort Ord, bordered by the CSUMB MRA and the Development North MRA to the north, the Interim Action MRA to the south, CSUMB campus property to the west, and additional former Fort Ord property to the east and southeast (Figure 5.1-1). The Parker Flats MRA is contained within the jurisdictional boundaries of the City of Seaside and the County of Monterey.

The Parker Flats MRA (Phase I and Phase II areas) encompasses approximately 1,180 acres and fully contains USACE property transfer parcels E18.1.1, E18.1.2, E18.1.3, E18.4, E19a.1, E19a.2, E19a.5, E20c.2, E21b.3, L20.18, L23.2, and L32.1, and portions of USACE property transfer parcels E19a.3 and E19a.4 (Table 5.1-1 and Figure 5.1-1). The remaining portions of USACE property transfer parcels E19a.3 and E19a.4 are contained in the Development North MRA (Section 7.1.1). The area completed under the Phase I activities was approximately 698 acres; the remaining approximately 482 acres were included under the Phase II activities (Table 5.1-1).

Gigling Road is located along a portion of the northern boundary of the MRA. The western portion of Gigling Road is an active roadway with vehicle traffic on a daily basis and is a major roadway of the FORA transportation network. Eucalyptus Road crosses the southern portion of the MRA and is restricted by road barriers marked with "road closed" signs located at the intersection of General Jim Moore Boulevard and Eucalyptus Road to the west and at the intersection of Parker Flats Road and Eucalyptus Road to the east. Watkins Gate Road also borders a portion of the eastern boundary of the MRA. Parker Flats Road crosses

through the central portion of the MRA. A number of unpaved roadways and dirt trails are located throughout the MRA (Figure 5.1-1).

The Parker Flats MRA is primarily open land; there are no fences and only limited gates and barricades that restrict access to the property, except for the four-strand barbed-wire fencing reinforced with concertina wire and locked chain-link gates along the southern side of Eucalyptus Road, restricting access to a small portion of the MRA and the former impact area to the south (Figure 5.1-1). "U.S. Government Property-No Trespassing" and "Danger-Explosives Area" warning signs are posted along the fence line and locked gates. Detailed information on roadways and access is provided in Table 5.1-2.

5.1.2 Structure and Utilities

The Parker Flats MRA contains several existing structures and buildings associated with the previous use of the area (Figure 5.1-1; Army 2007). Detailed information concerning location, size, description of structures, presence of ACM and/or LBP, if evaluated, and year constructed is provided in Table 5.1-3.

Several utilities extend onto or cross the Parker Flats MRA. Telephone, electrical, and water lines cross the southwestern portion of the MRA along or near Eucalyptus Road. A high-powered transmission line crosses the entire MRA in a northeast to southwest direction. Several utilities (water, storm drain, natural gas, telephone, sewer, and electrical) also extend into the MRA in the northwestern portion of the MRA along the boundary with CSUMB (Figure 5.1-1). More detailed information on utilities within the MRA is provided in Table 5.1-2.

5.1.3 Historical Military Use

Initial use of the Parker Flats MRA began in approximately 1917 when the U.S. government purchased more than 15,000 acres of land and designated it as an artillery range. Although no training maps from this time period have been found, pre-World War II-era military munitions have been removed during previous Army response actions within the Parker Flats MRA. Because the northern portion of the Parker Flats MRA (north of Gigling Road) prior to 1940 was privately owned agricultural land, it is unlikely that this area was used for military training until after this time.

Figure 5.1-2 shows the locations of known firing ranges and training sites within the MRA. Table 5.1-4 summarizes the historical military uses of these areas within the Parker Flats MRA. To facilitate previous MEC investigations and removal activities, the historical use areas were divided into MRSs.

The MRSs within the Parker Flats MRA Phase I included MRS-3, MRS-4B, MRS-13B, MRS-27A (portion), MRS-27B (portion), MRS-27G (portion), MRS-37, MRS-40, MRS-50, MRS-50EXP, MRS-52, MRS-53, MRS-53EXP, MRS-54EDC, and MRS-55 (Table 5.1-1 and Figure 5.1-3). The northern portion of the Parker Flats MRA Phase I is comprised entirely of MRS-13B (Practice Mortar Range), and is separated from the southern portion of the Parker

Flats MRA Phase I by an area that has not been fully investigated for the presence of MEC (Figure 5.1-3).

The MRSs within the Parker Flats MRA Phase II include MRS-4A, MRS-27A (portion), MRS-27B (portion), MRS-27C, MRS-44EDC/PBC, and MRS-15MOCO.2 (Table 5.1-1 and Figure 5.1-3). The historical use of the Parker Flats MRA Phase II areas was for troop training and maneuvers.

Historical uses for specific MRSs in the Parker Flats MRA Phase II include:

- MRS-4A - former Chemical, Biological, and Radiological (CBR) Training Area
- MRS-27A (Training Site 1), MRS-27B (Training Site 2), and MRS-27C (Training Site 3) - overnight bivouac areas
- MRS-15MOCO.2 - Firing lines for Ranges 44 and 45 (antitank weapons and 40mm grenade ranges, respectively)
- MRS-44EDC and MRS-44PBC - Actual historical use is unknown; evidence of military weapons and troop training.

Table 5.1-4 identifies the historical military uses of the MRSs within the Parker Flats MRA.

5.1.4 Administrative Controls

A number of administrative controls have been and will be imposed on the Parker Flats MRA, including land use covenants, city and county ordinances, FORA resolutions, an MOA between FORA and the DTSC, habitat-related requirements, and BOs. The applicable administrative controls are described in more detail in Table 5.1-5. These administrative controls are enforceable and place constraints on field-related activities and future development activities until such time that remediation has been completed and the regulatory agencies have made a determination as to the closure status of the MRA.

5.2 Parker Flats MRA Physical Profile

The physical profile provides information on topography, geology, vegetation, surface water, and groundwater associated with the MRA that may affect the location, movement, detectability, and recovery of military munitions.

5.2.1 Topography and Geology

The terrain of the Parker Flats MRA is primarily rolling hills with moderate to steep slopes. The elevation ranges from approximately 280 to approximately 490 feet msl with 2 to 15 percent slopes (Figure 5.2-1). The surface soils are characterized as eolian (sand dune) and terrace (river deposits), which consist of unconsolidated materials of the Aromas and Old Dune Sand formations. The primary soil type present in the Parker Flats MRA is Oceano Loamy Sand with smaller areas of Arnold-Santa Ynez complex and Baywood Sand (Figure

5.2-1). Soil conditions at the MRA consist predominantly of weathered dune sand, which provides a relatively good environment for conducting geophysical surveys including electromagnetic and magnetic surveys. Table 5.2-1 provides more detailed information on the geology of the former Fort Ord and soils encountered within the MRA.

5.2.2 Vegetation

Vegetation in the Parker Flats MRA consists primarily of coastal coast live oak woodland with smaller areas of maritime chaparral, grassland, and coastal scrub (Table 5.2-2 and Figure 5.2-2; USACE/Jones & Stokes 1992). Vegetation varies from sparsely vegetated areas to heavy brush. Past field activities have noted the presence of poison oak in the area. As part of the Army's removal actions for MEC, vegetation was cut to make the surface safe and accessible for MEC removal crews. In 2005, FORA, under the supervision of the Army, performed a prescribed burn on 147 acres of the Parker Flats MRA.

5.2.3 Surface Water and Groundwater

Groundwater investigations associated with the Basewide RI/FS have resulted in the installation of a number of groundwater monitoring wells on former Fort Ord property near the Parker Flats MRA. The Seaside and Salinas Groundwater Basins are the main hydrogeologic units that underlie the MRA. The depth to groundwater is estimated to be greater than 100 feet bgs. One known groundwater monitoring well is located in the northwestern portion of the MRA in the Phase I area, and two groundwater monitoring wells are located northwest of the MRA (Figure 5.2-1). The occurrence of groundwater beneath the MRA is not expected to influence geophysical surveys conducted for MEC remediation activities.

There are no aquatic features (i.e., vernal pools, ponds) or delineated wetlands reported to be present on the Parker Flats MRA; however, several aquatic feature are present to the east and southeast of the MRA (Figure 5.2-2).

5.3 Parker Flats MRA Release Profile

The release profile provides information on the MRA with respect to investigation and removal history, location and extent of military munitions, such as MEC, MPPEH, and MD, and history and conditions of HTW.

5.3.1 Investigation and Removal History

Previous work in the Parker Flats MRA includes site investigations, sampling investigations, and removal actions. Details of information on the investigations within the Parker Flats MRA Phase I were documented in the Parker Flats RI/FS (MACTEC 2006). The evaluation of the Parker Flats MRA Phase I area is complete. A ROD is pending for the Phase I area. Figures 5.3-1 through 5.3-3 show the results of investigations and removal actions by identifying the location of MEC and MD previously removed from the Parker Flats MRA.

Following is a summary of previous site investigations and removal actions conducted by the Army within the Parker Flats MRA Phase II:

MRS-4A

- Sampling investigation of six grids from 1993 to 1994 (HFA 1994)
- Site Stats/Grid Stats (SS/GS) sampling and removal at six 100-foot by 200-foot grids in November 1997 (USA 2000b)
- 100 percent 4-foot ordnance and explosives (OE) removal at 38 100-foot by 100-foot grids in February 1998 (USA 2000b)

MRS-27A, MRS-27B, and MRS-27C

- Preliminary Assessment/Site Inspection (PA/SI) in 1996 (USACE 1997a)
- 4-foot OE removal performed between September 1998 and December 2000 on 5 acres of 27A overlapping with the site OE-53 expansion area (USA 2001i)
- 4-foot OE removal performed between March and October 1999 on 4 acres of 27A and 3.5 acres of 27B overlapping with the site OE-55 expansion area (USA 2001n)
- Visual surface removal in accessible areas from 2001 to 2002 (Parsons 2002a and 2002c)

MRS-44 EDC and MRS-44PBC

- SS/GS sampling at 12 100-foot by 200-foot grids from May 26 to July 13, 1998 (USA 2001o)
- 100 percent grid sampling at 22 100-foot by 100-foot grids in the EDC in 1999 (USA 2001o)
- 100 percent grid sampling at 13 100-foot by 100-foot grids in the Public Benefit Conveyance (PBC) in 1999 (USA 2001o)
- 100 percent 4-foot removal action at 83 complete and partial grids in MRS-44 PBC only from September to December 2000 (USA 2001o)
- Visual surface removal in accessible areas of the northern portion of MRS-44EDC from 2001 to 2002 (Parsons 2002a and 2002c)

MRS-15MOCO.2

- 100 percent grid sampling at 20 100-foot by 100-foot grids from March to August 1999 (USA 2001m)
- Fuel break maintenance at 35 15-foot by 100-foot grids in 2001 (USA 2001p)
- Surface TCRA at Ranges 43-48 from August to December 2001 (Parsons 2002b)

- Prescribed burn preparatory action at Ranges 43-48 from August to October 2002 (Parsons 2004a)
- NTCRA Phase I from July to November 2003, which included an analog removal to depth at 98 100-foot by 100-foot complete grids and 97 partial grids and digital geophysical surveys in accessible portions of Notice of Intent (NOI) areas and identified SCA (Parsons 2004b)
- MRS Ranges 43-48 and MRS-MOCO.2 – Removal of selected range-related debris (RRD) between October and December 2004 to facilitate ongoing or future munitions responses on portions of the site made inaccessible by RRD. No MEC were found in MRS-MOCO.2 (Parsons 2005)
- NTCRA Phase II, which included analog removal, digital geophysical mapping, and MEC removal to depth from January to December 2005 (Parsons 2006d)

In addition, a visual surface removal was conducted in accessible areas that covered the majority of the Parker Flats MRA Phase II. Several sampling grids shown on Figure 5.3-1 have also been investigated in the Phase II area (Parsons 2002a and 2002c).

These investigations and removal actions are summarized in Tables 5.3-1 and 5.3-2. Table 5.3-3 includes a list of MEC found within the individual MRS that are within Parker Flats MRA Phase I and Phase II, and MEC and MD are shown on Figures 5.3-1, 5.3-2, and 5.3-3.

5.3.2 Types of MEC Recovered and Hazard Classification

Table 5.3-3 includes a summary of MEC recovered from the Parker Flats MRA and associated hazard classification scores. All MEC removed from the MRA were identified and assigned a hazard classification. Hazard classification scores range from 0 to 3 according to the following descriptions:

Hazard Classification Score	Description
0	Inert MEC that will cause no injury
1	MEC that will cause an injury or, in extreme cases, could cause major injury or death to an individual if functioned by an individual's activities
2	MEC that will cause major injury or, in extreme cases, could cause death to an individual if functioned by an individual's activities
3	MEC that will kill an individual if detonated by an individual's activities

The hazard classification provides a qualitative assessment of risk for MEC. These classifications will be used as inputs in future risk assessments for the Parker Flats MRA. It should be noted that SAA is not considered in the risk assessment because SAA poses no explosive risk.

5.3.3 Location of MEC and MD

Figures 5.3-1, 5.3-2, and 5.3-3 show the distribution of MEC and MD within the Parker Flats MRA (Phase I and Phase II). A summary of the MEC and MD encountered during previous investigations and removal actions in the Parker Flats MRA Phase II only is provided in Table 5.3-4 and included:

- 365 UXO items
- 569 DMM items
- 1 Insufficient Data (ISD) item (potential MEC that could not be classified as either UXO or DMM)
- 11,734 pounds MD (includes MD-E and MD-F items if weights were documented)

Figures 5.3-2 and 5.3-3 show the patterns and concentrations of recovered MEC and MD in the Parker Flats MRA. Significant amounts of MEC and MD were encountered during previous investigations throughout the Parker Flats MRA Phase I. The largest concentrations of MEC were located in the central and southern portions of the Phase I area and in MRS-15MOCO.2. A significant amount of MEC was also recovered from the north central portion of MRS-13B.

Recovered MD (total pounds per grid) in the Parker Flats MRA is shown on Figure 5.3-3. The majority of the grids along the boundaries of previous investigations and removal actions contained less than 10 pounds of MD per grid. Many of those boundary grids contained no MD. A portion of the MD identified on Figures 5.3-1 and 5.3-3 includes SAS but not SAA.

The MMRP database indicates that the majority of the MEC items recovered from the Parker Flats MRA were located between 0 and 24 inches bgs, or in the many burial pits found in the Phase I area. Figure 5.3-4 shows the distribution of MEC recovered at specified depth intervals.

5.3.4 HTW History and Conditions

A BRA was conducted by the Army to evaluate the potential presence of COCs related to HTW at known or suspected small arms ranges and military munitions training sites within the former Fort Ord (Shaw/MACTEC 2006). The areas are identified as HAs. The objectives of the BRA investigation activities were to identify which HAs could be eliminated from consideration for potential remediation related to COCs, and to identify areas that require additional investigation for potential chemical contamination or should be considered for remediation/habitat mapping related to COCs.

Table 5.3-5 summarizes the findings of the BRA with respect to HTW for each MRS. As stated in the FOSET, all identified HTW issues have been addressed and no further action was recommended (Army 2007).

5.3.5 Regulatory Status

Work completed to date has been documented in after action reports (Section 5.3.1), which have received regulatory reviews; however, the regulatory agencies have identified the following outstanding issues:

- The CERCLA process must be completed for the Parker Flats MRA Phase II, including development of an RI/FS, development of a Proposed Plan, and completion of a ROD.
- Additional quality assurance and MEC removal, if necessary, must be completed in areas proposed for residential development within the MRA.

5.4 Parker Flats MRA Land Use and Exposure Profile

The land use and exposure profile provides information on the MRA with respect to cultural resources, the current and reasonably foreseeable future uses of the land, and the potential human receptors that may be exposed to military munitions.

5.4.1 Cultural Resources

According to archaeological records, the greater Monterey Peninsula was occupied by Native American groups, including the Ohlone (Costanoan) Indians (EA 1991). Monterey County has designated the southeastern margin of the former Fort Ord as an archaeologically sensitive zone based on two known archaeological sites (EA 1991). The remaining portions of the former Fort Ord have been designated as having low or no archaeological sensitivity. The Parker Flats MRA is located in the central portion of the former Fort Ord in an area designated as having low archaeological sensitivity.

Actions to be taken at the CSUMB MRA will be in compliance with the Programmatic Agreement among the Department of the Army, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer Regarding the Base Closure and Realignment Actions at Fort Ord, California.

5.4.2 Current Land Use

The current uses for the MRA include open land. There are residual structures that were in support of the training at the MRA, but these have been abandoned. Reportedly, the area is accessed by day recreational users, including hikers and mountain bikers. There is also evidence of trespasser activity and illegal dumping.

5.4.3 Reasonably Foreseeable Future Land Use

Table 5.4-1 and Figure 5.4-1 identify the proposed uses of the MRA by parcel. As indicated in the Base Reuse Plan, this area is planned for residential, development with borderland interface, and habitat reserve. It is important to note that general development land use category encompasses infrastructure activities, such as roadway and utility construction as

well as commercial/retail, parks, borderland activities, a horse park, and the State Central Coast Veterans Cemetery.

5.4.4 Potential Receptors

A number of potential human receptors that could come in contact with residual MEC have been identified for current and future land use scenarios. The potential human receptors include:

- Construction Workers (persons conducting surface and subsurface construction activities) – current/future
- Utility Workers (persons installing and maintaining surface and subsurface utilities) - current/future
- Trespassers (persons not authorized to enter or use an area) – current/future
- Firefighters (may require installation of fire breaks) – current/future
- Emergency Response Workers (police and emergency medical technicians conducting surface activities) – current/future
- Ancillary Workers (biologist, archaeologists) – current/future
- Residents (persons conducting surface and subsurface activities) – future
- Recreational Users (persons biking and on foot) – future

5.5 Parker Flats MRA Ecological Profile

The ecological profile provides information on the MRA with respect to biological resources, plant communities and habitats, threatened and endangered species, and habitat management. This information is discussed below and provided in Table 5.5-1.

As discussed in Section 5.3.4, COCs related to HTW have been previously addressed and no further action was recommended. Therefore, potential exposure of ecological receptors to the primary risk factors has been mitigated to an acceptable level and ecological receptor exposure is not considered further in this CSM.

The HMP identifies the Parker Flats MRA as development (including residential) and habitat reserve with borderland development areas along an NRMA interface (Figure 5.5-1). The NRMA separates the development category land from the adjacent habitat reserve area. The NRMA and habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to minimize impacts to listed species.

FORA will implement the mitigation requirements identified in the HMP for MEC activities in accordance with the BOs developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b). For

borderland areas, FORA will follow best management practices while conducting MEC activities to prevent the spread of exotic species, limit erosion, and limit access to the NRMA.

5.5.1 Major Plant Communities and Ecological Habitats

Vegetation in the Parker Flats MRA consists primarily of coastal coast live oak woodland with smaller areas of maritime chaparral, grassland, and coastal scrub (Table 5.2-2 and Figure 5.2-2; USACE/Jones & Stokes 1992). Vegetation varies from sparsely vegetated areas to heavy brush. Past field activities have noted the presence of poison oak in the area.

5.5.2 Threatened and Endangered Species

Special-status biological resources are those resources, including plant, wildlife, and native biological communities, that receive various levels of protection under local, state, or federal laws, regulations, or policies. The closure and disposal of former Fort Ord is considered a major federal action that could affect several species proposed for listing or listed as threatened or endangered under the federal ESA.

The HMP for former Fort Ord complies with the USFWS BOs and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival (USACE 1997b). The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. Since April 1997, three additional BOs have been issued that are relevant to MEC removal activities (USFWS 1999, 2002, and 2005). Future MEC remediation is required to be consistent with the applicable conservation measures.

Threatened or endangered plant species identified as having possible occurrence in the Parker Flats MRA include sand gilia (endangered) and Monterey spineflower (threatened).

In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. As shown on Figure 5.5-1, it is possible the CTS may be found in the Parker Flats MRA as the majority of the MRA is within 2 km of aquatic features that may provide breeding habitat for the CTS.

5.5.3 Other Communities and Species of Concern

As identified in the HMP, a number of species could be found on the Parker Flats MRA, which have been identified in Table 5.5-2 by parcel. The vegetation on the MRA consists primarily of native oak woodland with smaller areas of maritime chaparral, grassland, and coastal scrub. The following species are identified in the HMP as having possible occurrence in the Parker Flats MRA: toro manzanita, sandmat manzanita, Hooker's manzanita, seaside bird's beak, Monterey ceanothus, Eastwood's ericameria, California black legless lizard, and Monterey ornate shrew.

5.6 Parker Flats MRA Pathway Analysis

As discussed in Sections 5.3.4 and 5.5, potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army. Based on the Army's evaluation in the FOSET, no further action relative to the COCs is required under the ESCA RP. Therefore, no further discussion of potential exposure to human or ecological receptors to COCs relative to the HTW program is presented in this pathway analysis. The primary focus of the exposure pathway analysis is for human health risk from MEC that are potentially present.

5.6.1 Exposure Pathways

An exposure pathway analysis was conducted for the Parker Flats MRA using the information gathered in the CSM profiles. The likelihood of exposure, however, has been significantly reduced as a result of the Army's previous surface and subsurface removal actions. Exposure pathways for the Parker Flats MRA are presented on Figure 5.6-1 and discussed below.

Source

Source areas within the Parker Flats MRA were addressed during the Army's previous removal actions. The historical source areas within the Parker Flats MRA are shown on Figure 5.1-3, and recovered MEC and MD from the MRA are shown on Figures 5.3-1, 5.3-2, and 5.3-3. The source areas include troop training and maneuver areas. It is anticipated that the areas showing no MEC or MD data, having undergone surface removal, would contain similar types of MEC in the subsurface as found in adjacent areas. Areas where subsurface investigations are not complete are considered data gaps.

Figure 5.6-2 illustrates the most likely release mechanisms for MEC being found in the Parker Flats MRA, which included:

- Firing, Intentional Placement, Mishandling/Loss, Abandonment, and Burial (Troop Training and Maneuvers)

Access

Access is mostly unrestricted to the Parker Flats MRA Phase II with the exception of MRS-15MOCO.2, which is restricted by the fence around the impact area.

Receptor / Activity

Table 5.6-1 identifies the potential human receptors and exposure media as Ground Surface or Below Grade. The activities of the five current and six future surface receptors would result in potential exposure on the ground surface. The activities of three current receptors and four future receptors would result in a potential subsurface exposure in the Parker Flats

MRA Phase II areas where subsurface activities would be expected and subsurface removal actions have not occurred.

5.6.2 Exposure Pathway Analysis

As discussed above, Figure 5.6-1 graphically presents the exposure pathways analysis for the Parker Flats MRA.

There remains a risk of MEC exposure to current and future receptors during surface and intrusive activities. The risk of surface exposure was greatly reduced as a result of surface removal actions. Those surface removal actions focused on accessible areas; therefore, MEC may be present on the surface.

All current and future receptors anticipated to conduct subsurface activities would be at risk of exposure in areas having no history of subsurface MEC removal actions.

5.7 Parker Flats MRA Conclusions and Recommendations

Potential exposure of human and ecological receptors to COCs related to the HTW program has been evaluated by the Army. Based on the Army's evaluation in the FOSET, no further action relative to the COCs is required under the ESCA RP. The CSM has identified a potential for human health risk associated with residual (or potentially present) MEC in the Parker Flats MRA.

As required by the AOC, the SEDR provides conclusions and recommendations for each MRA. Generally, the SEDR recommendations identify that a particular MRA falls into one or more of the following categories:

- No response action or no further response action is appropriate
- Response action is necessary
- Additional data are required to fill data gaps
- Proceed to RI

The evaluation of the Parker Flats MRA Phase I area is complete. A ROD is pending for the Phase I area. Remedial action will be implemented after the ROD is issued.

The MEC encountered within the Parker Flats MRA are consistent with the historical use as a troop training area. However, data gaps, uncertainties, and/or open regulatory issues have been identified and must be addressed prior to receiving regulatory closure and implementing the planned reuse of the MRA. Therefore, the Parker Flats MRA falls into one of the categories, which is additional data are required to fill data gaps. Based on the information as presented in the CSM for the Parker Flats MRA, the recommendations are:

- Collection of additional data to fill data gaps:
  - Collect data sufficient to support the MEC remedial investigation in all areas where limited data are available. It is not anticipated that collection of additional data is required in MRS-15MOCO.2, MRS-44PBC, and MRS-4A.
  - Conduct an RQA Pilot Study to assess the potential for risk from undetected MEC in future residential areas after MEC investigation is completed in those areas.
- Proceed with Documentation – Prepare RI/FS and subsequent ROD.

The proposed pathway to regulatory closure incorporating the above recommendations is presented in Section 13.0 of this SEDR.

Table 5.1-1
Parker Flats MRA – Parcel Numbers, Acreage, and MRS Identifiers

USACE Parcel Number (for land transfer)	Acreage (approximate)			MRS Identifier
	Phase I	Phase II	Total	
E18.1.1	63	37*	100	MRS-44 EDC, MRS-50
E18.1.2	65*	13*	78	MRS-40, MRS-44 EDC, MRS-50
E18.1.3	0	40*	40	MRS-4A
E18.4	1	1*	2	MRS-4A
E19a.1	6	66*	72	MRS-4A, MRS-50, MRS-53
E19a.2	1	72*	73	MRS-27A, MRS-27B
E19a.3	188	75*	263	MRS-13B, MRS-27A, MRS-4B, MRS-53, MRS-55
E19a.4	144	94*	238	MRS-27B, MRS-27C, MRS-3, MRS-37, MRS-52, MRS-53, MRS-54, MRS-55
E19a.5	227	0	227	MRS-50, MRS-53, MRS-27G
E20c.2	0	34	34	MRS-44 EDC
E21b.3	0	32	32	MRS-15MOCO.2
L20.18	0	7*	7	MRS-44
L23.2	0	11	11	MRS-44 PBC
L32.1	3		3	MRS-13B
MRA TOTAL	698	482	1,180	

Note: * Indicates that a portion of the acreage is not designated as an MRS.

Table 5.1-2
Parker Flats MRA – Site Features

Feature	Description
Roadways	• Gigling Road is located along a portion of the northern boundary of the MRA, and only the western portion is an active roadway with vehicle traffic on a daily basis and is a major roadway of the FORA transportation network. • Eucalyptus Road crosses the southern portion of the MRA • Watkins Gate Road also borders a portion of the eastern boundary of the MRA. • Parker Flats Road crosses through the central portion of the MRA. • A number of unpaved roadways and dirt trails are located throughout the MRA.
Structures and Utilities	• The MRA includes a rappelling tower, a CBR training facility, several latrines, two support buildings, air transportation mock-ups, enlisted barracks, a gas chamber, and an observation tower. • Telephone, electrical, and water lines cross the southwestern portion of the MRA along or near Eucalyptus Road. • A high-powered transmission line crosses the entire MRA in a northeast to southwest direction. • Several utilities (water, storm drain, natural gas, telephone, sewer, and electrical) also extend into the MRA in the northwestern portion of the MRA along the boundary with CSUMB.
Fencing and Access	• The MRA is primarily open land, and there are no fences, gates, or barricades that restrict access to the property except for the four-strand barbed-wire fencing reinforced with concertina wire and locked chain-link gates along the southern side of Eucalyptus Road, restricting access to a small portion of the MRA and the former impact area to the south. • "U.S. Government Property-No Trespassing" and "Danger-Explosives Area" warning signs are posted along the fence line and locked gates. • Eucalyptus Road is restricted by road barriers marked with "road closed" signs located at the intersection of General Jim Moore Boulevard and Eucalyptus Road to the west and at the intersection of Parker Flats Road and Eucalyptus Road to the east.

Table 5.1-3
Parker Flats MRA – Existing Structures and Buildings

Parcel Number	Facility Number	Area (square feet)	Description	Asbestos-Containing Material	Lead-Based Paint	Year Built
Phase I Area						
E18.1.1	4B52	81	Field Range Latrines	Rated 6 to 13	Unknown	Unknown
E19a.3	4A52	207	Field Range Latrines	Not Surveyed	Unknown	Unknown
E19a.3	4B74	96	Field Range Latrines	No ACM	Unknown	Unknown
E19a.3	3984	1,364	Gas Chamber	No ACM	No	1984
E19a.4	4A44	174	Field Range Latrines	No ACM	Unknown	Unknown
E19a.5	4A22	179	Field Range Latrines	Rated 6 to 13	Unknown	Unknown
E19a.5	4A29	179	Field Range Latrines	No ACM	Unknown	Unknown
E19a.5	4A30	295	Field Range Latrines	No ACM	Unknown	Unknown
E19a.5	4A35	404	Field Range Latrines	Rated 6 to 13	Unknown	Unknown
E19a.5	4B50	180	Field Range Latrines	Rated 6 to 13	Unknown	Unknown
E19a.5	4A64	101	Field Range Latrines	No ACM	Unknown	Unknown
E19a.5	3949	21,372	Air Trans Mock-Up	No ACM	Yes	1976
E19a.5	3949A	2,921	Air Trans Mock-Up	No ACM	Unknown	Unknown
E19a.5	3949B	958	Air Trans Mock-Up	No ACM	Unknown	Unknown
E19a.5	3953B	42	Observation Tower	No ACM	Yes	1951
L32.1	H441	185	Fence Wall	Not Surveyed	Unknown	Unknown
Phase II Area						
E18.1.3	4386	7,332	Enlisted Barracks	Rated 6 to 13	Yes	1974
E18.1.3	4387	7,233	Enlisted Barracks	Rated 6 to 13	Yes	1974
E18.1.3	4476	74,167	Softball Field	Not Surveyed	No	1978
E18.4	4475	0	Water Tower	No ACM	Yes	1964
E19a.2	4B57	165	Field Range Latrines	Rated 6 to 13	Unknown	Unknown
E19a.2	4B58	165	Field Range Latrines	Rated 6 to 13	Unknown	Unknown
E19a.2	4B60	165	Field Range Latrines	No ACM	Unknown	Unknown
E19a.3	2028A	0	Field Range Latrines	Rated 6 to 13	Unknown	Unknown
E19a.3	4A34	176	Field Range Latrines	No ACM	Unknown	Unknown
E19a.3	4B56	174	Field Range Latrines	Not Surveyed	Unknown	Unknown
E19a.3	4B77	147	Field Range Latrines	No ACM	Unknown	Unknown
E19a.3	3950	305	Rappelling Tower	Not Surveyed	No	1981
E19a.4	4A26	165	Field Range Latrines	No ACM	Unknown	Unknown

Parcel Number	Facility Number	Area (square feet)	Description	Asbestos-Containing Material	Lead-Based Paint	Year Built
E19a.4	4A27	165	Field Range Latrines	No ACM	Unknown	Unknown
E19a.4	4A60	380	Field Range Latrines	No ACM	Unknown	Unknown
E19a.4	R391	96	Re-Locatable Building	Not Surveyed	Unknown	Unknown
E19a.4	R392	467	Re-Locatable Building	Not Surveyed	Unknown	Unknown
E19a.4	R393	300	Re-Locatable Building	Not Surveyed	Unknown	Unknown
E21b.3	3991	243	Covered Training Area	Unknown	Unknown	Unknown
E21b.3	R9441	161	Field Range Latrines	No ACM	No	1984

Table 5.1-4
Parker Flats MRA Phase II – Historical Military Use

Location	Description
General Vicinity	• The historical use of the Parker Flats MRA Phase II areas was for troop training and maneuvers. • 1940s training areas include portions of training areas G-1, G-2, H-1, and P. • 1950s training areas are assigned to 1st Brigade, 2nd Infantry, 3rd Brigade, 10th Infantry, 11th Infantry, and "RFP." • 1950s and 1960s maps indicate "1000' MTR RNG," "PTA," "Map Reading," and "MTR SQ." • "MTR SQ" appears in several locations of the northern portions of Parker Flats MRA Phase II. • "Sinkhole Practice Mortar Range" appears in the southern portion of MRS-13B.
MRS-4A	• A portion of MRS-4A was a former CBR Training Area. • This training area appears on historical maps (Fort Ord Training Areas & Facilities) July 15, 1957 and January 10, 1958.
MRS-27A (TS-1), MRS-27B (TS-2), MRS-27C (TS-3)	• Areas were part of a group of 25 training sites designated as Site OE-27 in the Revised Archive Search Report (USACE 1997a). • Training areas that were used as overnight bivouac areas. • These areas were labeled on a historical training area map called the Beardsley Map, date unknown.
MRS-44EDC/PBC	• Located in the area to the north of the former impact area. • The boundaries of these areas were identified when an ordnance safety specialist discovered 37mm HE fragmentation and a 37mm rotating band during a site visit for an adjacent site.
MRS-15MOCO.2	• Located within the boundary of the former impact area and contains the firing lines for Ranges 44 and 45. • Range 44 was used for firing of antitank weapons. • Range 45 was a 40mm grenade range.

Table 5.1-5
Parker Flats MRA – Administrative Controls

Type	Description
Land Use Covenants	• To further ensure protection of human health and the environment, the Army has agreed to enter into CRUPs with the State of California. The CRUPs place additional use restrictions on all of the transferring property, as appropriate. • Due to Fort Ord's former use as a military installation, the property may contain MEC and there remains a risk of encountering subsurface MEC. Any person conducting ground-disturbing or intrusive activities (e.g., digging or drilling) must comply with the applicable municipal code. Any alterations, additions, or improvements to the property in any way that may violate excavation restrictions are prohibited. No actual or potential hazard exists on the surface of the property from MEC that may be in the subsurface of the property provided the CRUPs are adhered to (Army 2007). • The CRUPs are defined in the "Memorandum of Agreement Among the Fort Ord Reuse Authority, Monterey County and Cities of Seaside, Monterey, Del Rey Oaks and Marina, California State University Monterey Bay, University of California Santa Cruz, Monterey Peninsula College, and the Department of Toxics Substances Control Concerning the Monitoring and Reporting of Environmental Restrictions on the Former Fort Ord, Monterey County, California." • These restrictions involve the enforcement of site review and reporting requirements and agency cost recovery/reimbursement requirements as imposed by the DTSC.
Restrictions to Digging / Excavation	• City of Seaside Ordinance No. 259 amending the municipal code referred to as Chapter 15.34 and Monterey County Ordinance 16.10. • These ordinances prohibit excavation, digging, development or ground disturbance of any type on the former Fort Ord that involves the displacement of 10 or more cubic yards of soil without approval.
FORA Resolution 98-1	• An approved FORA resolution that contains proposed and suggested measures to avoid or minimize hazardous material impact.
ESCA MOA	• MOA between FORA and the jurisdictions for the purpose of defining terms of an agreement for holding and managing (ownership and responsibilities) property while remedial work is accomplished under an ESCA. • MOA establishes FORA's ownership during the MEC remediation period; identifies that jurisdictions need to provide public safety response from police, fire, and other emergency personnel as needed; establishes control of access to ESCA properties during the MEC remediation period; and agreement that access to properties will be governed by the restrictions included in the Land Use Covenant accompanying the transfer of the property.
Habitat Management Plan	• The HMP incorporated conservation measures pursuant to USFWS BOs dated prior to issuance of the HMP in April 1997. Specific MEC activities were addressed in Chapter 3 of the HMP (USACE 1997b).
Biological Opinions	• Since the release of the HMP, three additional BOs have been issued that are relevant to the MEC remediation period (USFWS 1999, 2002, and 2005). Accordingly, some information has been updated and additions have been made to the sections that address MEC activities. • Future MEC work is required to be consistent with the applicable conservation measures.

Table 5.2-1
Parker Flats MRA – Geology and Soils

Type	Description
General Geology	• The former Fort Ord is located within the Coast Ranges Geomorphic Province, which consists of northwest-trending mountain ranges, broad basins, and elongated valleys generally paralleling the major geologic structures. • The former Fort Ord is located at the transition between the mountains of the Santa Lucia Range and the Sierra de la Salinas to the south and southeast, respectively, and the lowlands of the Salinas River Valley to the north. • The geology of the former Fort Ord generally reflects this transitional condition. Older, consolidated rocks are characteristically exposed in the mountains near the southern base boundary but are buried under a northward-thickening sequence of younger, unconsolidated alluvial fan and fluvial sediments in the valleys and lowlands to the north. In the coastal lowlands, these younger sediments commonly interfinger with marine deposits. • The former Fort Ord and the adjacent areas are underlain, from depth to ground surface, by one or more of the following older, consolidated units: Mesozoic granite and metamorphic rocks; Miocene marine sedimentary rocks of the Monterey Formation; and upper Miocene to lower Pliocene marine sandstone of the Santa Margarita Formation (and possibly the Pancho Rico and/or Purisima Formations). • Locally, these units are overlain and obscured by geologically younger sediments, including: Pliocene-Pleistocene alluvial fan, lake, and fluvial deposits of the Paso Robles Formation; Pleistocene eolian and fluvial sands of the Aromas Sand; Pleistocene to Holocene valley fill deposits consisting of poorly consolidated gravel, sand, silt, and clay; Pleistocene and Holocene dune sands; recent beach sand and alluvium. • Depth to groundwater is likely to be more than 100 feet bgs. Layers of perched groundwater may be present.
Topography and Soils	• Terrain consists of rolling hills with moderate to steep slopes. • Elevation ranges from approximately 280 to 490 feet msl with 2 to 15 percent slopes. • The surface soils are characterized as eolian (sand dune) and terrace (river deposits), which consist of unconsolidated materials of the Aromas and Old Dune Sand formations. • The primary soil type present in the MRA is Oceano Loamy Sand with 2 to 15 percent slopes with smaller areas of Arnold-Santa Ynez Complex and Baywood Sand.

References: EA 1991, HLA 1995, and the Fort Ord MMRP Database

Table 5.2-2
Parker Flats MRA – Vegetation

USACE Parcel Number	MRS Identifier	Vegetation
E18.1.1	MRS-44 EDC, MRS-50	Coastal coast live oak woodland, coastal scrub, and maritime chaparral
E18.1.2	MRS-40, MRS-44 EDC, MRS-50	Coastal coast live oak woodland and maritime chaparral
E18.1.3	MRS-4A	Coastal coast live oak woodland and coastal scrub
E18.4	MRS-4A	Coastal coast live oak woodland and coastal scrub
E19a.1	MRS-4A, MRS-50, MRS-53	Coastal coast live oak woodland, coastal scrub, and maritime chaparral
E19a.2	MRS-27A, MRS-27B	Coastal coast live oak woodland
E19a.3	MRS-13B, MRS-27A, MRS-4B, MRS-53, MRS-55	Coastal coast live oak woodland, maritime chaparral, and grassland
E19a.4	MRS-27B, MRS-27C, MRS-3, MRS-37, MRS-52, MRS-53, MRS-54, MRS-55	Coastal coast live oak woodland and maritime chaparral
E19a.5	MRS-50, MRS-53, MRS-27G	Coastal coast live oak woodland, maritime chaparral, and grassland
E20c.2	MRS-44 EDC	Maritime chaparral
E21b.3	MRS-15MOCO.2	Maritime chaparral
L20.18	MRS-44	Maritime chaparral
L23.2	MRS-44 PBC	Maritime chaparral
L32.1	MRS-13B	Coastal coast live oak woodland

Reference: USACE/Jones & Stokes 1992

Please note: As part of the Army's removal actions for MEC on the Parker Flats MRA, vegetation was cut to make the surface safe and accessible for MEC removal crews. In 2005, FORA, under the supervision of the Army, performed a prescribed burn on 147 acres of the Parker Flats MRA.

Table 5.3-1
Parker Flats MRA Phase II – Investigation and Sampling Activities

Activity	Summary
MRS-4A	• Sampling Investigation - Between 1993 and 1994, six grids were sampled in the vicinity of MRS-4A and no MEC were found (HFA 1994). • SS/GS Sampling and Removal - In November 1997, SS/GS sampling was used to investigate six 100-foot by 200-foot grids (USA 2000b).
MRS-27A, B, C	• PA/SI - In 1996, a USACE UXO Safety Specialist conducted a munitions response (site walk) that included MRS-27A, B, and C as part of a PA/SI (USACE 1997a).
MRS-44EDC	• SS/GS Sampling - Between May and July 1998, SS/GS sampling was performed on 12 100-foot by 200-foot grids in the EDC parcel (USA 2001o).
MRS-44EDC/44PBC	• 100 Percent Grid Sampling - In 1999, 100 percent grid sampling was conducted in the EDC and PBC parcels. Thirteen 100-foot by 100-foot sampling grids were placed throughout the PBC parcel. In the EDC parcel, 22 100-foot by 100-foot sampling grids were placed to the west of the PBC boundary (USA 2001o).
MRS-15MOCO.2	• 100 Percent Grid Sampling - In 1999, 20 100-foot by 100-foot sample grids were investigated in MRS-15MOCO.2 to determine the need and scope of future removal actions. The sample grids were located along the perimeter of the former impact area in areas behind firing ranges or between range fans (USA 2001m).

Table 5.3-2
Parker Flats MRA Phase II – Removal Activities

Activity	Summary
MRS-4A and Expansion Grids	• 100 Percent 4-foot MEC Removal Action - In February 1998, a 100 percent removal action was conducted to a depth of 4 feet in 38 100-foot by 100-foot grids and partial grids. A few of the grids contained several rat's nests. Trash pits were excavated using a backhoe (USA 2000b). • 100 Percent 4-foot MEC Removal Action - In August 2000, a 100 percent removal action was conducted to a depth of 4 feet in several 100-foot by 100-foot expansion grids and partial expansion grids. MEC were encountered in some of these expansion grids and consisted primarily of hand grenades, rifle grenades, and grenade fuzes (Fort Ord MMRP Database).
MRS-44PBC	• 100 Percent 4-foot MEC Removal Action - Between September 1998 and December 2000, a 4-foot MEC removal action was conducted in 83 complete and partial grids (USA 2001o).
MRS-15MOCO.2	• Fuel Break Maintenance - In 2001, the fuel breaks system in the former impact area was reestablished as part of the fire safety and control program in the area. Vegetation and surface removal work was performed on 150 contiguous 15-foot by 100-foot grids along the southern side of Eucalyptus Road. Thirty-five of the grids were in MRS-15MOCO.2. No MEC items were found during the fuel break work (USA 2001p). • Ranges 43-48 Surface TCRA - Between August and December 2001, a surface TCRA was performed over the former Ranges 43-48 area (which included a portion of MRS-MOCO.2) to remove MEC, MD, and RRD from the surface of the site's open and accessible areas (Parsons 2002b). • Ranges 43-48 Prescribed Burn Preparatory Action - Between August and October 2002, fire prevention and control work were accomplished in preparation for the Ranges 43-48 prescribed burn. This preparatory action entailed moving tires; cutting vegetation around structures, removing utility poles; clearing brush; removing/pruning trees and performing fire prevention work. During the preparatory work, no MEC were encountered (Parsons 2004a). • NTCRA (Phases I) - Between July and November 2003, an NTCRA was conducted in MRS-15MOCO.2. Ninety-eight 100-foot by 100-foot grids and 97 partial grids were selected for analog removal to depth. The majority of the MEC found were hand grenade fuzes recovered from burial pits discovered 30 and 60 inches bgs. Digital geophysical surveys were conducted over all accessible portions of the MRS-MOCO.2 NOI removal areas to map and document the post-analog removal site conditions and accurately locate and identify any geophysical anomalies potentially representing MEC in the subsurface. This operation identified areas of obstructions/interferences such as asphalt, and material from the Range 45 pad, or telephone poles as SCA (Parsons 2004b). • MRS Ranges 43-48 and MRS-MOCO.2 – Removal of selected RRD between October and December 2004 to facilitate ongoing or future munitions responses on portions of the site made inaccessible by RRD. No MEC were found in MRS-MOCO.2 (Parsons 2005). • NTCRA (Phase II) - Between January and December 2005, a Phase II removal action was conducted in SCAs identified during the Phase I Removal Action. The SCAs were the focus of Phase II activities for those portions of the site that compromised instrument performance or technician safety during the Phase I field activities. Phase II activities included analog removal, digital geophysical mapping, and MEC removal to depth (Parsons 2006d).

Table 5.3-2
Parker Flats MRA Phase II – Removal Activities

Activity	Summary
Northern Portions of MRS-27A, B, and C, and 'No Data' Areas	• Between December 2001 and February 2002, a TCRA was conducted in accessible areas of the Parker Flats MRA Phase II including MRS-27A, B, C, and MRS-4A. Also included were the "No Data" areas north of MRS-44EDC and the large "No Data" area north of the largest Parker Flats MRA Phase I area (Figure 5.3-1). The areas having undergone previous removal actions were not included in this removal action. Field crews walked open areas and trails, visually searching for MEC and MD. MEC and MD encountered were removed or destroyed (Parsons 2002a).

Table 5.3-3
Parker Flats MRA Phase II – Types of MEC Removed and Hazard Classification

MEC ITEMS	UXO	DMM	ISD	Hazard Classification
Cap, blasting, electric, M6	3	1	0	1
Cartridge case, 40mm (projectile removed/case in tact)	0	1	0	1
Cartridge, 40mm, practice, M781	0	4	0	1
Cartridge, grenade, auxiliary, M7	8	0	0	1
Charge, 0.25lbs, demolition, TNT	0	1	0	2
Charge, nitrostarch, 0.25lb *	0	0	0	2
Cord, detonating	1	1	0	NS
Flare, aircraft, parachute, M9A1	1	0	0	2
Flare, surface, trip, M49 series	3	0	0	1
Fuze, grenade, hand, M10 series	0	443	0	1
Fuze, grenade, hand, M204 series	0	2	0	1
Fuze, grenade, hand, practice, M205 series	228	104	0	1
Fuze, grenade, hand, practice, M228	17	10	0	1
Fuze, projectile, combination, M1907	1	0	0	1
Fuze, projectile, point detonating, M48 series	1	0	0	2
Grenade, hand, fragmentation, MK II	1	0	0	3
Grenade, hand, Illumination, MK I	8	0	0	1
Grenade, hand, practice, M69	1	0	0	1
Grenade, hand, practice, MK II	12	0	0	1
Grenade, hand, smoke, M18 series	12	0	0	1
Grenade, rifle, antitank, M9 series	1	0	0	3
Grenade, rifle, smoke, M22 series	0	2	0	1
Pot, 2.5lb, smoke, HC, screening, M1	1	0	0	1
Primer, ignition, percussion, M82	8	0	0	1
Projectile, 22mm, subcaliber, practice, M744	10	0	0	1
Projectile, 40mm, cluster, white star, M585	1	0	0	1
Projectile, 40mm, high explosive, M406	2	0	0	3
Projectile, 40mm, parachute, illumination, M583 series	1	0	0	1
Projectile, 57mm, high explosive, M306 series	1	0	0	3
Projectile, 60mm, mortar, illumination, M83 series	1	0	0	2
Projectile, 75mm, high explosive, MK I	2	0	0	3

Table 5.3-3
Parker Flats MRA Phase II – Types of MEC Removed and Hazard Classification

MEC ITEMS	UXO	DMM	ISD	Hazard Classification
Projectile, 75mm, Shrapnel, MK I	3	0	0	3
Propellant, 60mm, wafers, mortar	2	0	0	1
Pyrotechnic mixture, illumination	7	0	0	1
Rocket, 35mm, subcaliber, practice, M73	7	0	0	1
Signal, ground, rifle, parachute, M17 series	1	0	0	1
Signal, illumination, aircraft, AN-M37 series	3	0	0	1
Signal, illumination, ground, M125 series	7	0	0	2
Simulator, projectile, airburst, M74 series	4	0	0	1
Simulator, projectile, ground burst, M115A2	6	0	0	2
HE, 40mm (Model Unknown)	0	0	1	NS
MRA TOTAL	**365**	**569**	**1**	

Notes: NS – Not Specified
* - MMRP database identified items as UXO with a quantity of zero.
Reference: Fort Ord MMRP Database

Please note: Munitions descriptions have been taken directly from the Army's MMRP Database and/or other historical documents. Any errors in terminology, filler type, and/or discrepancies between model number and caliber/size are a result of misinformation from the data sources.

Table 5.3-4
Parker Flats MRA Phase II – Summary of Recovered MEC and MD

Type	Summary
UXO	365 items
DMM	569 items
ISD	1 item (MPPEH that could not be classified as UXO, DMM, or MD)
MD	11,734 pounds (includes MD-E and MD-F items if weights were documented)
Aerial Extent	• Significant amounts of MEC and MD were encountered during previous investigations throughout the Parker Flats MRA Phase I. The largest concentrations of MEC were located in the central and southern portions of the Phase I area and in MRS-15MOCO.2. A significant amount of MEC was also recovered from the north-central portion of MRS-13B. • The majority of the grids along the boundaries of previous investigations and removal actions contained less than 10 pounds of MD per grid. Many of those boundary grids contained no MD. A portion of the MD identified includes SAS but not SAA.
Vertical Extent	• The MMRP database indicates that the majority of the MEC items recovered from the Parker Flats MRA were located between 0 and 24 inches bgs, or in the many burial pits found in the Phase I areas.

Table 5.3-5
Parker Flats MRA – HTW History and Conditions

Type	Summary
HA-92 (MRS-3)	• The evaluation of HA-92 (MRS-3) included site reconnaissance and site investigation soil sampling. Soil sample results indicated that low levels of metals, motor oil, diesel, and one semivolatile compound were detected. No explosive compounds were detected. Because sample results were below cleanup levels, no further action related to chemical contamination was recommended for HA-92 under the BRA.
HA-93 (MRS-4A)	• The evaluation of HA-93 (MRS-4A) included a literature search, review of the information gathered during the munitions response, and reconnaissance of the site. No targets, spent ammunition, or other MEC-related items were observed, and no further action related to chemical contamination was recommended for HA-93 under the BRA.
HA-94 (MRS-4B)	• The evaluation of HA-94 (MRS-4B) included a literature search, review of the information gathered during the munitions response, and reconnaissance of the site. No evidence of a range, MEC-related items, concentrations of spent SAA, or soil contamination was observed, and no further action related to chemical contamination was recommended for HA-94 under the BRA.
HA-103 (MRS-13B)	• The evaluation of HA-103 (MRS-13B) included a literature search, review of the information gathered during the munitions response, and reconnaissance of the site. No targets, fighting positions, or other MEC-related items were observed. The site does contain RRD including trash pits.
HA-133 (MRS-27A)	• The evaluation of HA-133 (MRS-27A) included a literature search and reconnaissance of the site. No targets, spent ammunition, or other MEC-related items were observed. Several fighting positions were mapped. Because no evidence of a range or stained soil was observed, no further action related to chemical contamination was recommended for HA-133 under the BRA.
HA-134 (MRS-27B)	• The evaluation of HA-134 (MRS-27B) included a literature search and reconnaissance of the site. No targets, spent ammunition, or other MEC-related items were observed. Several fighting positions were mapped. Because no evidence of a range or stained soil was observed, no further action related to chemical contamination was recommended for HA-134 under the BRA.
HA-135 (MRS-27C)	• The evaluation of HA-135 (MRS-27C) included a literature search and reconnaissance of the site. No targets or range features were observed. Several fighting positions were mapped. An expended smoke grenade (MD) was found in one of the fighting positions. Because no evidence of a range or stained soil was observed, no further action related to chemical contamination was recommended for HA-135 under the BRA.
HA-139 (MRS-27G)	• The evaluation of HA-139 (MRS-27G) included a literature search and reconnaissance of the site. An expended signal flare was found within the portion of HA-139 that lies within the parcel. One fighting position was also observed. No targets, spent ammunition, or range features were observed. Because no evidence of a range or stained soil was observed, no further action related to chemical contamination was recommended for HA-139 under the BRA.
HA-168 (MRS-37)	• The evaluation of HA-168 (MRS-37) included site reconnaissance, review of the information gathered during the munitions response, and site investigation soil sampling. No explosive compounds were detected. Based on these results, no further action related to chemical contamination was recommended for HA-168 under the BRA.

Table 5.3-5
Parker Flats MRA – HTW History and Conditions

Type	Summary
HA-170 (MRS-40)	• The assessment of HA-170 (MRS-40) included site reconnaissance and evaluation of soil samples collected at adjacent HA-180. Soil samples were collected to evaluate whether explosive residue was present in an area where high numbers of military munitions were found. Based on the results of the reconnaissance and results of sampling at HA-180, no further action related to chemical contamination was recommended for HA-170 under the BRA.
HA-174 (MRS-44 EDC and MRS-44 PBC)	• The evaluation of HA-174 (MRS-44PBC and MRS-44EDC) included a literature search, review of the information gathered during the munitions response, site reconnaissance, and sampling for MC. Several blank SAA casings and one expended 75mm projectile casing were found. Surface soil samples were collected to evaluate whether MC were present in areas where high numbers of military munitions were found. Because no explosive-related compounds were detected and metals concentrations were below Fort Ord background levels, no further action related to chemical contamination was recommended under the BRA.
HA-180 (MRS-50 and MRS-50 EXP)	• The evaluation of HA-180 (MRS-50 and MRS-50EXP) included a literature search, review of the information gathered during the munitions response, site reconnaissance, and site investigation sampling. Surface soil samples were collected to evaluate whether explosive residue was present in an area where high numbers of military munitions were found. Because no explosive-related compounds were detected and metals concentrations were below Fort Ord background levels, no further action related to chemical contamination was recommended under the BRA.
HA-182 (MRS-52)	• The evaluation of HA-182 (MRS-52) included a literature search and reconnaissance of the site. Based on the site reconnaissance and sample results from adjacent areas where a high number of military munitions items were removed, no further action related to chemical contamination was recommended for HA-185 under the BRA.
HA-183 (MRS-53)	• The evaluation of HA-183 (MRS-53) included a literature search, review of the information gathered during the munitions response, site reconnaissance, and site investigation sampling. Soil sample results indicated that low levels of metals, motor oil, and diesel were detected. No explosive compounds were detected. Because sample results were below cleanup levels, no further action related to chemical contamination was recommended for HA-183 under the BRA.
HA-184 (MRS-54EDC)	• The evaluation of HA-184 (MRS-54EDC) included a literature search, review of the information gathered during the munitions response, and reconnaissance of the site. No evidence of targets or range features was found; however, 21 fighting positions were observed. Because no evidence of a range or concentrated areas of military munitions were found at this site, no further action related to chemical contamination was recommended for HA-184 under the BRA.
HA-185 (MRS-55)	• The evaluation of HA-185 (MRS-55) included site reconnaissance, review of the information gathered during the munitions response, and site investigation soil sampling. No explosive compounds were detected. Based on these results, no further action related to chemical contamination was recommended for HA-185 under the BRA

Table 5.3-5
Parker Flats MRA – HTW History and Conditions

Type	Summary
Miscellaneous	• There is no evidence that non-munitions-related hazardous substances were stored, released, or disposed of on parcels in Parker Flats that include all or portions of MRS-4A, MRS-13B, MRS-27A, MRS-27B, MRS-27G, MRS-37, MRS-40, MRS-44EDC, MRS-44PBC, MRS-50, MRS-50EXP, MRS-53, MRS-53EXP, and MRS-55. • Hazardous substances were stored for one year or more, released or disposed of on parcels in Parker Flats that include all or portions of MRS-3, MRS-37, MRS-52, MRS-53EXP, MRS-54EDC, MRS-27B, and MRS-27C in excess of reportable quantities specified in 40 CFR Part 373. All hazardous substance storage operations have been terminated on these parcels.

Reference: Army 2007

Table 5.4-1
Parker Flats MRA - Future Land Use by Parcel

USACE Parcel Number	MRS Number	Land Use Category	Description	Acreage
E18.1.1	MRS-50	Development	Cemetery	40
	MRS-50	Development	Residential	23
	MRS-44 EDC	Development	Cemetery	5
	No related MRS	Development	Cemetery	23.6
	No related MRS	Development	Residential and Cemetery Uses	8.4
E18.1.2	MRS-40, MRS-50	Development	Cemetery	61
	MRS-44 EDC	Development	Cemetery	12
	No related MRS	Development	Cemetery	3
	No related MRS	Development	Residential	2
E18.1.3	MRS-4A	Development	Residential – Single Family	1
	No related MRS	Development	Residential – Single Family	39
E18.4	MRS-4A	Development	Residential – Single Family	2
E19a.1	MRS-4A, MRS-50, MRS-53	Development	Residential – Single Family	6
	No related MRS	Development	Residential – Single Family	66
E19a.2	MRS-27A, MRS-27B	Habitat	Reserve – Horse Park Footprint. Equestrian Trails Required. Oak Woodland Habitat.	72
	MRS-13B	Habitat	Reserve – Horse Park Footprint. Equestrian Trails Required. Oak Woodland Habitat.	1
E19a.3	MRS-13B	Development	Commercial – Horse Park – Structures, Parking, Arena	98
	MRS-27A	Development	Commercial – Horse Park – Structures, Parking, Arena	75
	MRS-4B, MRS-27A, MRS-53, MRS-55	Development	Commercial – Horse Park – Structures, Parking, Arena	90
E19a.4	MRS-27B, MRS-27C	Habitat	Reserve – Equestrian Access	94
	MRS-3, MRS-37, MRS-52, MRS-53, MRS-54, MRS-55	Habitat	Reserve – Equestrian Access	144
E19a.5	MRS-50, MRS-53	Development	Institutional – MPC Education Use – Driving Track, Structures, Parking	215
	MRS-27G	Development	Institutional – MPC Educational Uses – Driving Track, Structures, Parking	6

Table 5.4-1
Parker Flats MRA - Future Land Use by Parcel

USACE Parcel Number	MRS Number	Land Use Category	Description	Acreage
	MRS-50, MRS-53	Development	Residential	6
E20c.2	MRS-44 EDC	Development	Residential – Single Family	34
E21b.3	MRS-15MOCO.2	Development	MPC – Educational Use, Structures, Parking	32
L20.18	MRS-44	Development	Roadway	7
L23.2	MRS-44 PBC	Development	Institutional – MPC Education Use – Structures, Parking	11
L32.1	MRS-13B	Development	Light Industrial/Office – Infill Development	3
MRA - TOTAL				**1,180**

Table 5.5-1
Parker Flats MRA – Ecological Information

Type	Summary

Biological	• Dominant vegetation in the area is coastal coast live oak woodland with smaller areas of maritime chaparral and grassland. These biological communities are described below:
	  • Coast Live Oak Woodland and Savanna - The live oak woodland is an open-canopied to nearly closed-canopied community with a grass or sparsely scattered shrub understory. Oaks provide nesting sites and cover for birds and cover for many mammals. Common wildlife species in coast live oak woodlands include black-tailed deer, California mouse, raccoon, California quail, scrub jay, and Nuttall's woodpecker. Red-tailed hawks and great-horned owls nest and roost in the inland coast live oaks, but probably make little use of the coastal oaks because the tightly spaced branches discourage them from entering the tree canopies.
	  • Maritime chaparral is one of the dominant vegetation type within Fort Ord, characterized by a wide variety of evergreen, sclerophyllus (hard-leaved) shrubs occurring in moderate to high density on sandy, well-drained substrates within the zone of coastal fog. This community is primarily dominated by shaggy-barked manzanita. Other species found in the shrub layer include chamise, toro manzanita, sandmat manzanita, toyon, blue blossom ceanothus, and Monterey ceanothus. The greatest diversity of wildlife species at former Fort Ord occurs in the chaparral. Birds such as orange-crowned warbler, rufous-sided towhee, and California quail nest in the chaparral. Small mammals such as California mouse and brush rabbit forage in this habitat and serve as prey for gray fox, bobcat, spotted skunk, and western rattlesnake.
	  • Grasslands - Annual grasslands dominated by introduced species such as slender wild oats, soft chess, and ripgut brome are the most common grassland community within the Plan Area. Perennial grasslands are of two types at former Fort Ord: valley needlegrass grassland and blue wildrye. Common wildlife species include California ground squirrel, Heerman's kangaroo rat, narrow-faced kangaroo rat, western meadowlark, and kestrel.

Habitat Management Plan / Biological Opinions	• The USFWS BO required that an HMP be developed and implemented to reduce the incidental take of listed species and loss of habitat that supports these species. The HMP for former Fort Ord complies with the BO and establishes the guidelines for the conservation and management of wildlife and plant species and habitats that largely depend on former Fort Ord land for survival. The HMP incorporated conservation measures pursuant to BOs dated prior to issuance of the HMP in April 1997. • To maintain compliance with habitat management and monitoring requirements presented in the HMP, biological resources are monitored after MEC removal activities have been completed. The HMP specifies mitigation measures to monitor the successful regeneration of species and habitat following removal of MEC. Monitoring includes conducting follow-up monitoring for a period of 5 years after MEC removal to document habitat conditions. Since the inception of the MEC removal program, the Army had elected to augment the monitoring program, where feasible, to include the collection of baseline data prior to MEC removal. Baseline data have been collected to provide additional information on preexisting species composition and distribution of herbaceous annual sensitive species. Both baseline and follow-up data are used to compare community regeneration to HMP success criteria. • The HMP identifies the area as development (including residential) and habitat reserve with borderland development areas adjacent to the NRMA interface. The NRMA separates the development category land from the adjacent habitat reserve area. The NRMA and habitat reserve areas support plant and animal species that require implementation of mitigation measures identified in the HMP to ensure compliance with the ESA and to

Table 5.5-1
Parker Flats MRA – Ecological Information

Type	Summary

	minimize impacts to listed species.
	• The HMP identified principal management categories. The MRA is identified as development (including residential) with borderlands interface and habitat reserve. These principal management categories are defined as:
	  • Development - lands in which no management restrictions are contained under the HMP. Some plans for salvage of biological resources for these parcels may be specified.
	  • Habitat Reserve – land in which no development is allowed. Management goals for the area are conservation and enhancement of threatened and endangered species.
	  • Borderland Development Area – land abutting the NRMA that is slated for development. Management of these lands includes no restrictions except along the development/reserve interface.
	• FORA will implement the mitigation requirements during MEC activities identified in the HMP in accordance with the BO developed during formal consultation between the Army and the USFWS under Section 7 of the ESA. For habitat areas, these measures include conducting habitat monitoring in compliance with Chapter 3 of the HMP (USACE 1997b).
	• Since April 1997, three additional BOs have been issued that are relevant to the MEC remediation activities (USFWS 1999, 2002, and 2005). Future MEC remediation is required to be consistent with the applicable conservation measures.

Threatened and Endangered Species	• Special-status biological resources are those resources, including plant, wildlife and native biological communities, that receive various levels of protection under local, state, or federal laws, regulations, or policies. The closure and disposal of former Fort Ord is considered a major federal action that could affect several species proposed for listing or listed as threatened or endangered under the federal ESA. • Threatened or endangered plant species identified as having possible occurrence in the Parker Flats MRA include sand gilia (endangered) and Monterey spineflower (threatened). • In 2004, the CTS was identified as a threatened species. CTS may be found as far as 2 km from aquatic breeding habitats. Most of the Parker Flats MRA is located within 2 km of an aquatic feature in which CTS may be present.

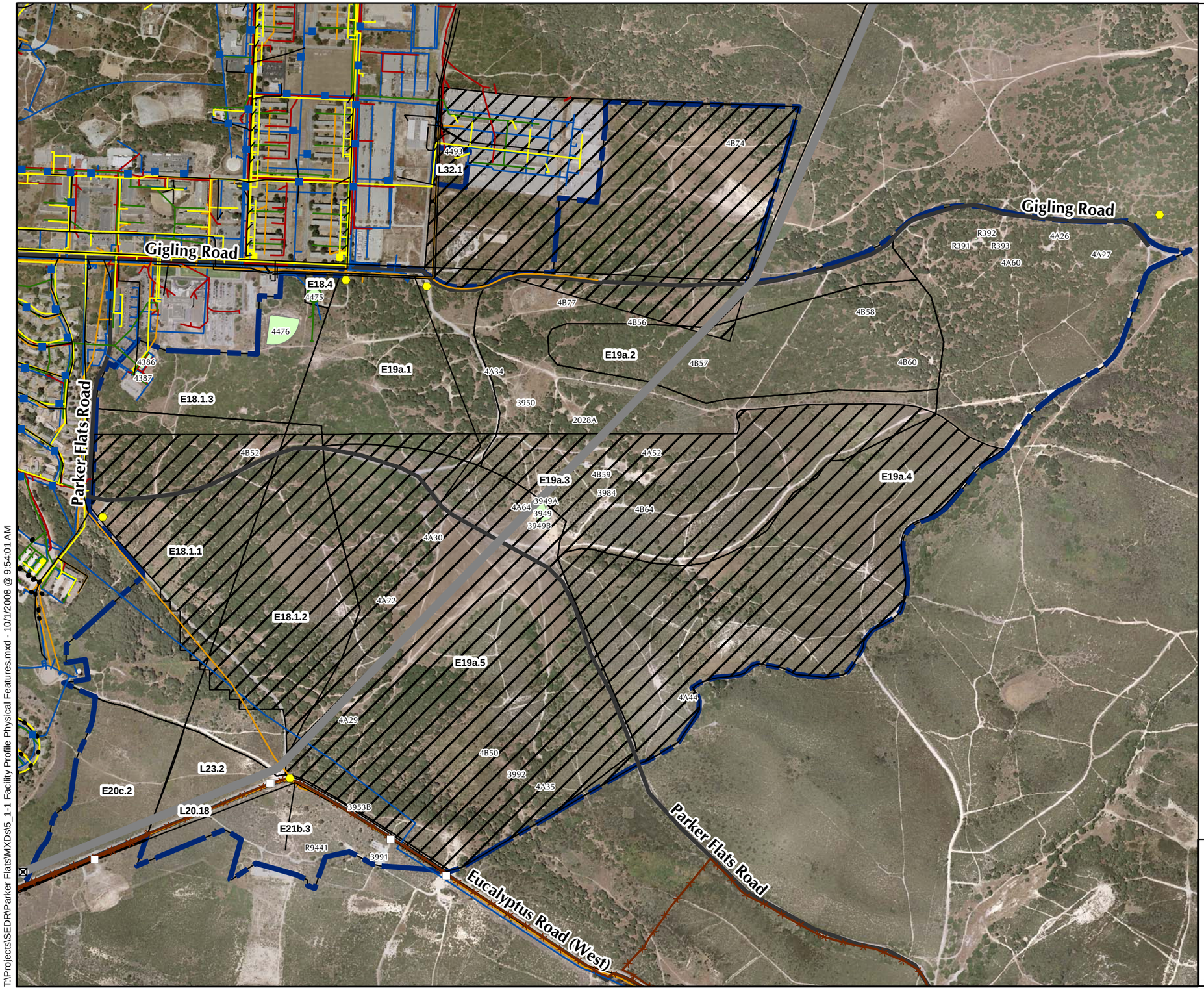
Table 5.5-2
Parker Flats MRA – HMP Category by Parcel and Possible Occurrence of HMP Species

USACE Parcel Number	HMP Designated Use	HMP Species
E18.1.1	Development	Monterey spineflower, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, California black legless lizard, Monterey ornate shrew
E18.1.2	Development	Monterey spineflower, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, California black legless lizard, Monterey ornate shrew
E18.1.3	Development	Monterey spineflower, Monterey ceanothus, California black legless lizard, Monterey ornate shrew
E18.4	Development	Monterey spineflower, Monterey ornate shrew
E19a.1	Development	Monterey spineflower, toro manzanita, sandmat manzanita, Monterey ceanothus, Hooker's manzanita, California black legless lizard, Monterey ornate shrew, California tiger salamander
E19a.2	Habitat Reserve	Monterey spineflower, toro manzanita, sandmat manzanita, Monterey ceanothus, Hooker's manzanita, California black legless lizard, Monterey ornate shrew, California tiger salamander
E19a.3	Development (includes a borderland buffer along the NRMA Interface)	Monterey spineflower, toro manzanita, sandmat manzanita, Monterey ceanothus, Hooker's manzanita, California black legless lizard, Monterey ornate shrew, California tiger salamander
E19a.4	Habitat Reserve	Monterey spineflower, toro manzanita, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, Hooker's manzanita, California black legless lizard, Monterey ornate shrew, California tiger salamander
E19a.5	Development (includes a borderland buffer along the NRMA Interface)	Sand gilia, Monterey spineflower, toro manzanita, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, Hooker's manzanita, California black legless lizard, Monterey ornate shrew, California tiger salamander
E20c.2	Development	Monterey spineflower, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, California black legless lizard, Monterey ornate shrew
E21b.3	Development (includes a borderland buffer along the NRMA Interface)	Monterey spineflower, Seaside bird's beak, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, California black legless lizard, California tiger salamander
L20.18	Development	Monterey spineflower, Seaside bird's beak, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, California black legless lizard, Monterey ornate shrew
L23.2	Development	Monterey spineflower, sandmat manzanita, Monterey ceanothus
L32.1	Development	Monterey spineflower, sandmat manzanita, Monterey ornate shrew

Reference: USACE 1997b

Table 5.6-1
Parker Flats MRA – Potential Receptors and Exposure Media

Potential Receptor	Exposure Media			Exposure Media		
	Current	Ground Surface	Below Grade	Future	Ground Surface	Below Grade
Construction Workers	✓	✓	✓	✓	✓	✓
Utility Workers	✓	✓	✓	✓	✓	✓
Trespassers	✓	✓		✓	✓	
Firefighters	✓	✓	✓	✓	✓	✓
Emergency Response Workers	✓	✓		✓	✓	
Ancillary Workers	✓	✓	✓	✓	✓	✓
Residents				✓	✓	✓
Recreational Users				✓	✓	✓



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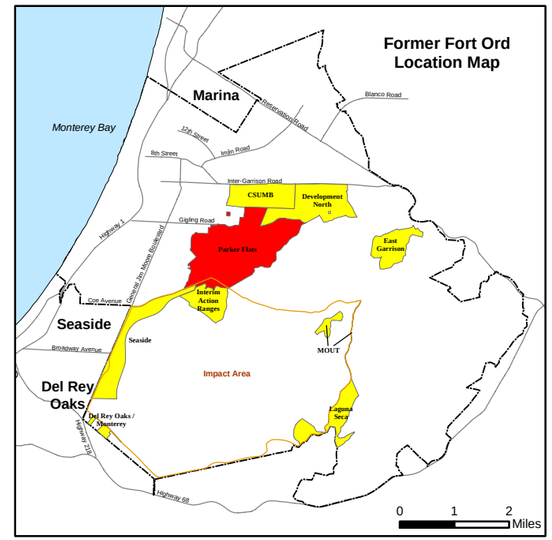
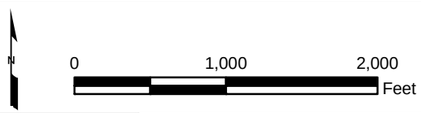
Legend

- School
- Fire Station
- Gate
- Entry Forbidden Sign
- Sign
- Hydrant
- High-Power Transmission Line Tower
- Electrical Line Pole
- Munitions Response Area
- Major Road
- Electrical Line
- Fence
- Gas Line
- Storm Line
- Telephone Line
- Water Line
- Sewer Line
- High-Power Transmission Line and Right of Way
- R9211 Structure
- E23.1 USACE Parcel
- Phase I Parker Flats RI/FS





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Parker Flats MRA Facility Profile Physical Features

FORA ESCA RP
Monterey County, California

Figure 5.1-1

Gigling Road

Gigling Road

Parker Flats Road

Training Site 1

Training Site 2

Training Site 3

Training Site 7

Training Site 8

Parker Flats Road

Eucalyptus Road (West)

46

45

44

76

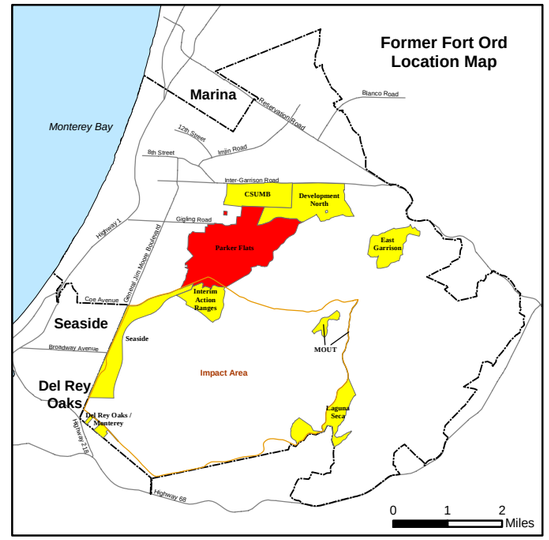
43

47

Unknown

Legend

- Training Sites
- Munitions Response Area
- 42 Firing Range
- Historical Range
- Major Road
- Fence
- Phase I Parker Flats RI/FS



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Parker Flats MRA Facility Profile
Ranges and Training Sites

FORA ESCA RP
Monterey County, California

Figure 5.1-2

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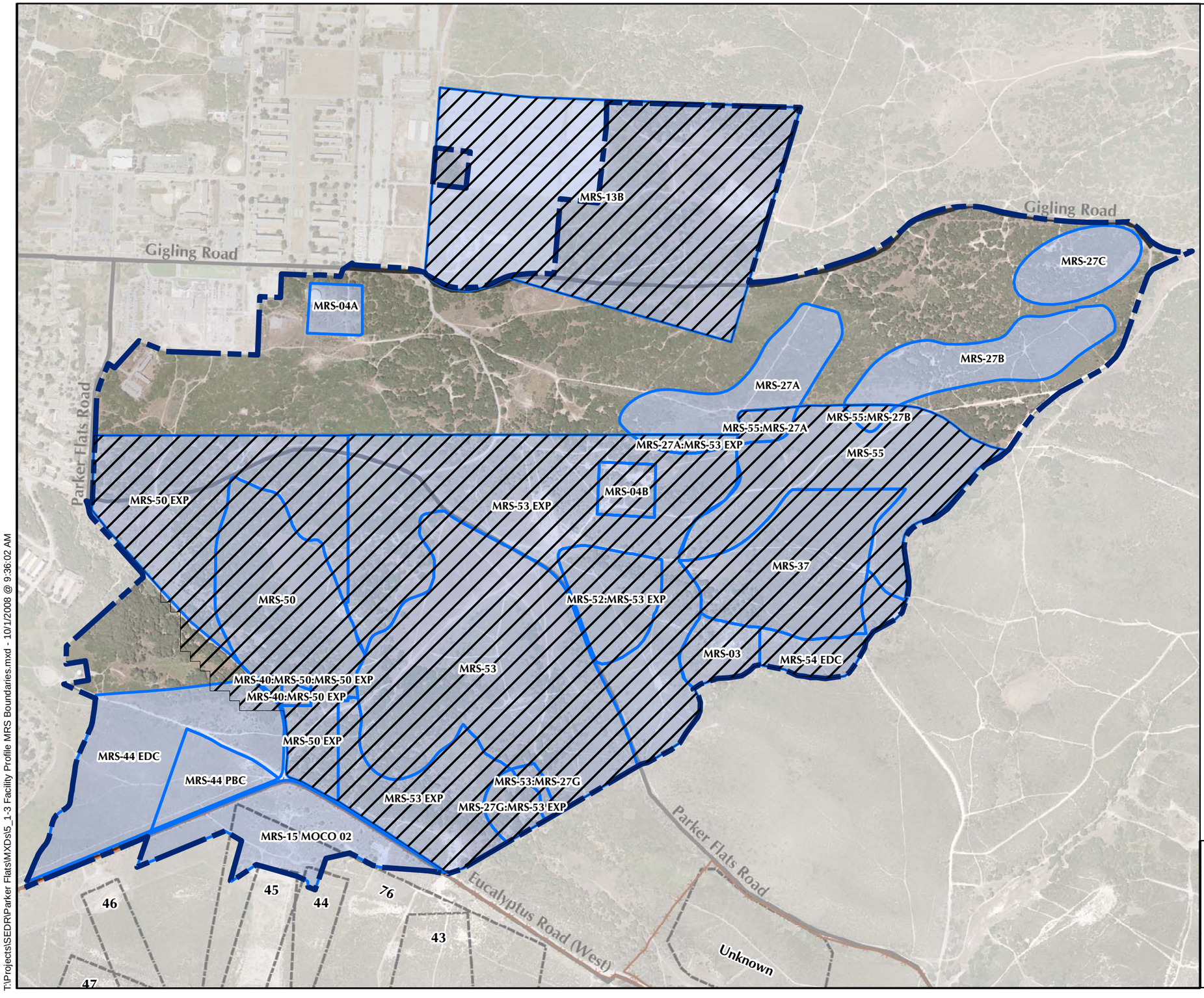
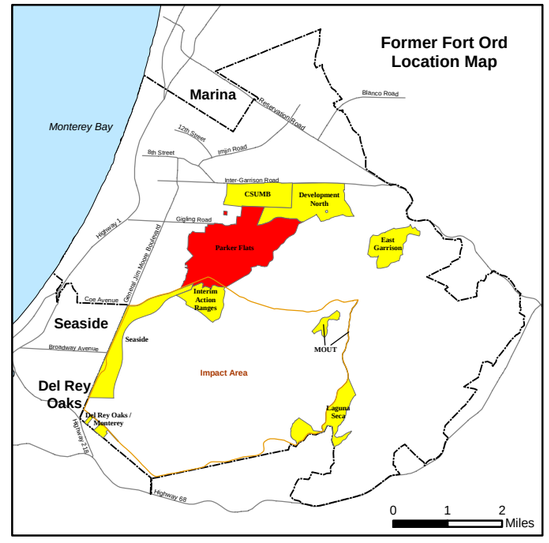
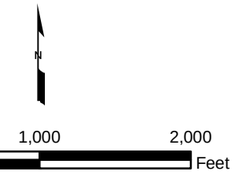


Legend

- Munitions Response Area
- Major Road
- Fence
- 86 Firing Range
- MRS-53 Munitions Response Site
- Phase I Parker Flats RI/FS





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Parker Flats MRA Facility Profile Munitions Response Site Boundaries

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Monterey County, California

Figure 5.1-3

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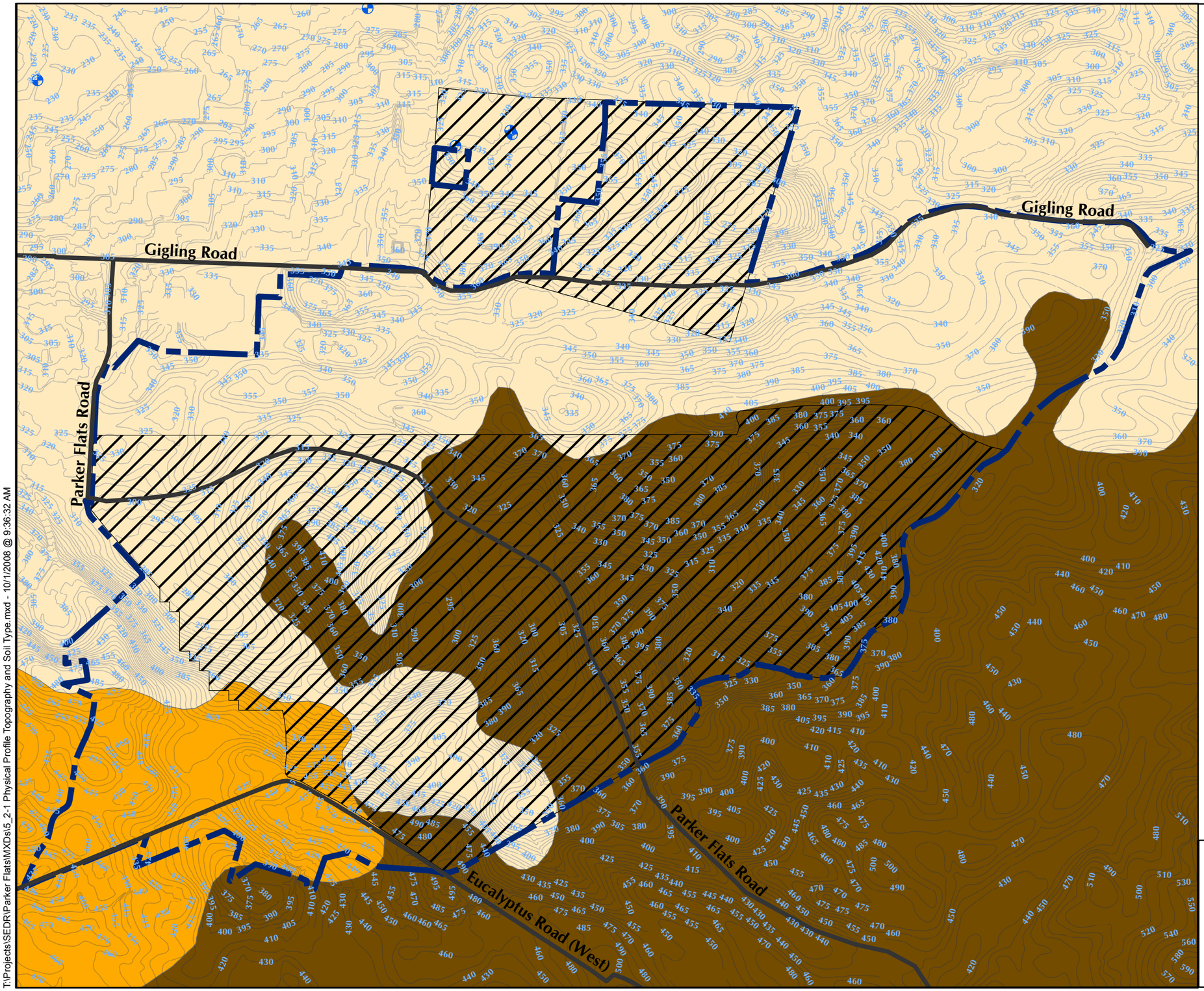
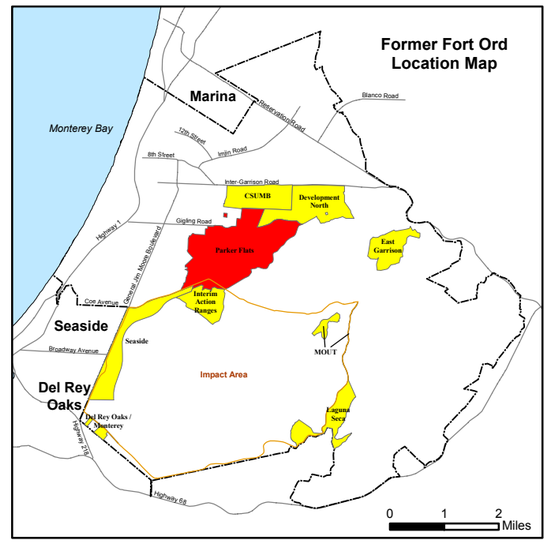


Legend

- Environmental Well
- Abandoned Well
- Water Supply Well
- 540 Topography 5ft
- Munitions Response Area
- Major Road
- Phase I Parker Flats RI/FS

Soil Type

- Arnold-Santa Ynez Complex
- Baywood Sand, 2 to 15 Percent Slopes
- Oceano Loamy Sand, 2 to 15 Percent Slopes



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Parker Flats MRA Physical Profile Topography and Soil Type

FORA ESCA RP
Monterey County, California

Figure 5.2-1

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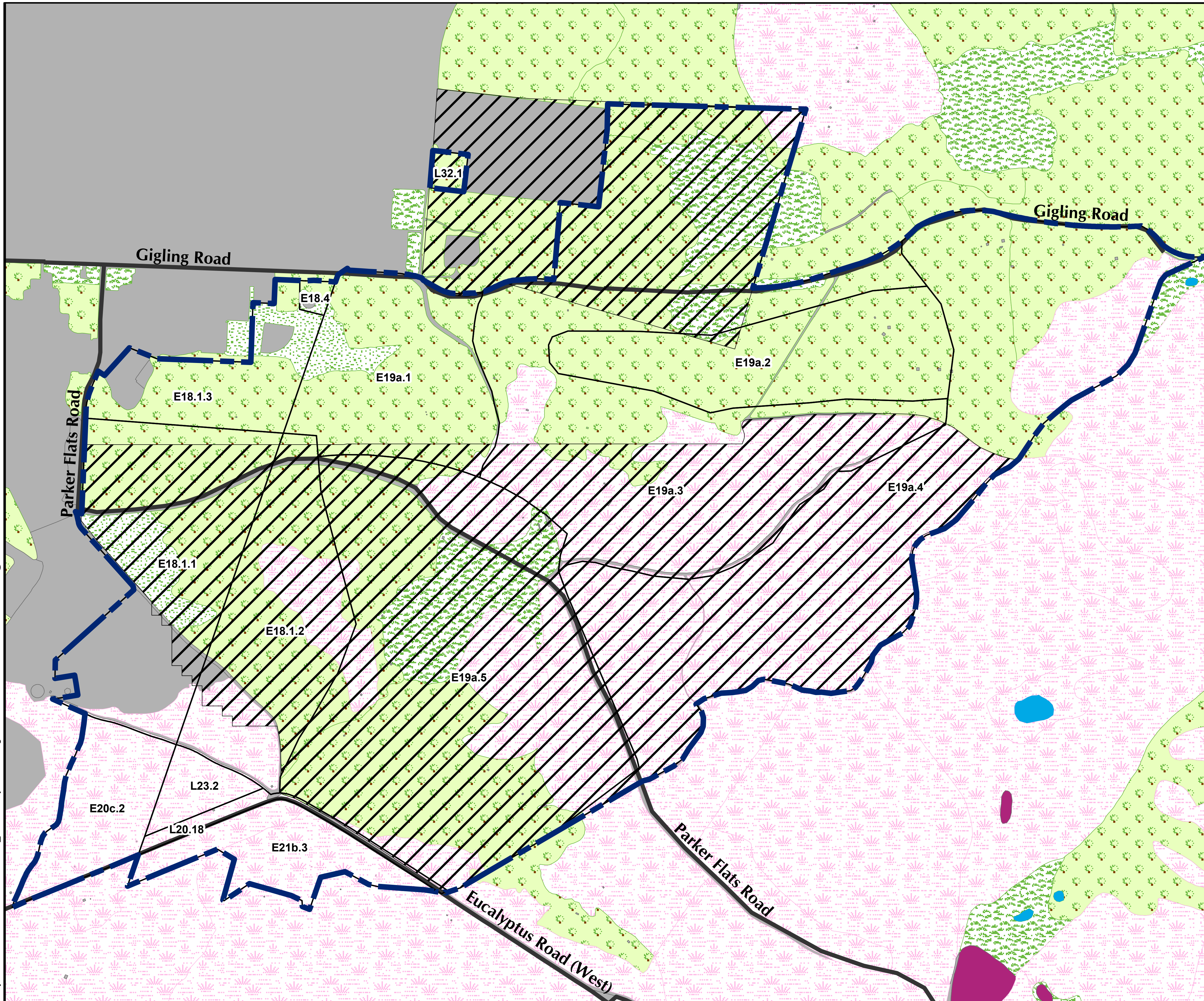

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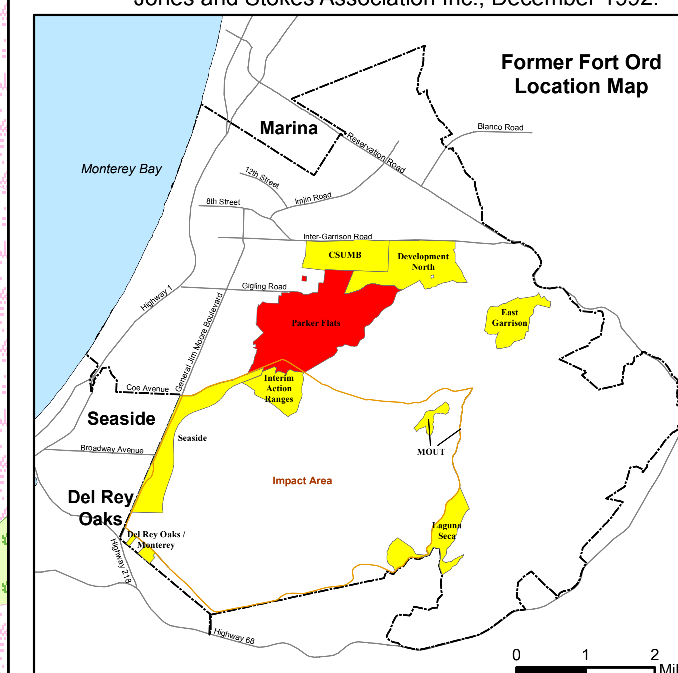
Legend

- Munitions Response Area
- Major Road
- E19a.2 USACE Parcel
- Phase I Parker Flats RI/FS

Vegetation Type

- Grassland
- Maritime Chaparral
- Coastal Coast Live Oak Woodland
- Coastal Scrub
- Ice Plant Mats
- Aquatic Feature
- Developed / Disturbed

Source: Flora and Fauna Baseline Study of Fort Ord, California, Jones and Stokes Association Inc., December 1992.



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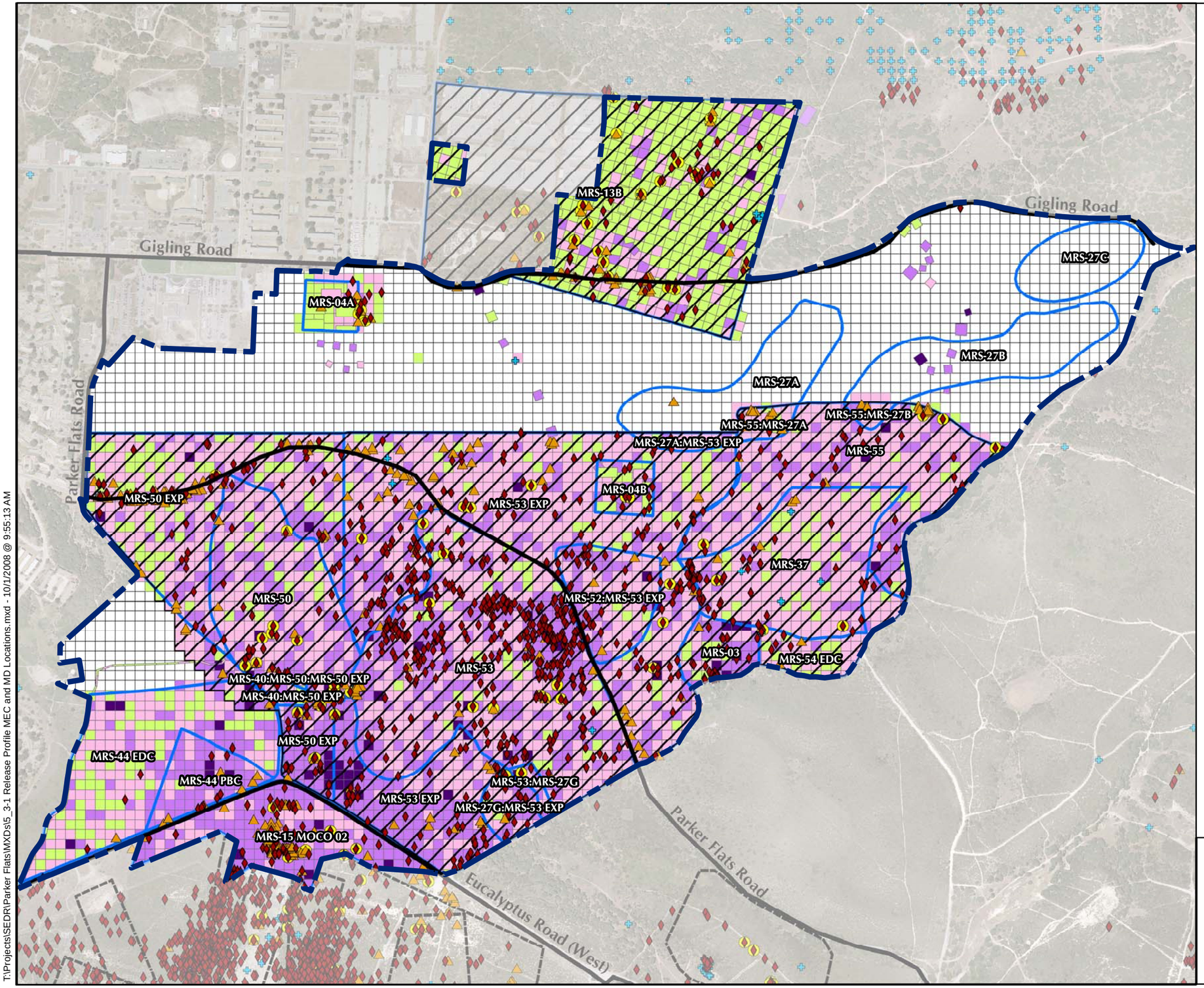
Parker Flats MRA Physical Profile Generalized Vegetation Communities

FORA ESCA RP
Monterey County, California

Figure 5.2-2



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Legend

- Munitions Response Area
- MRS-55 — Munitions Response Site
- Major Road
- Phase I Parker Flats RI/FS

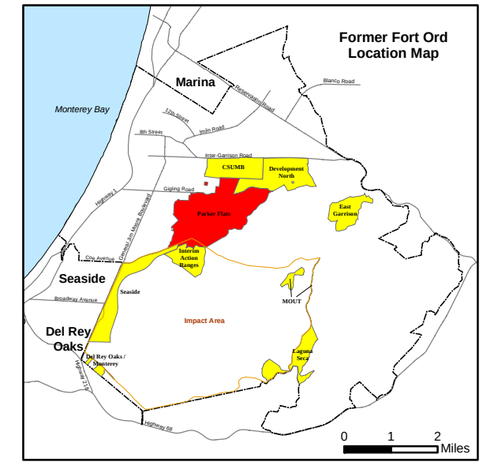
MEC Type

- Unexploded Ordnance (UXO)
- Discarded Military Munition (DMM)
- Insufficient Data (ISD)
- Burial Pit Containing MEC

Munitions Debris (MD) by Weight (total pounds per grid)

- No Data
- 0
- < 10
- 10 to 100
- > 100

Note: Munitions Debris (MD) includes scrap related to small arms ammunition.



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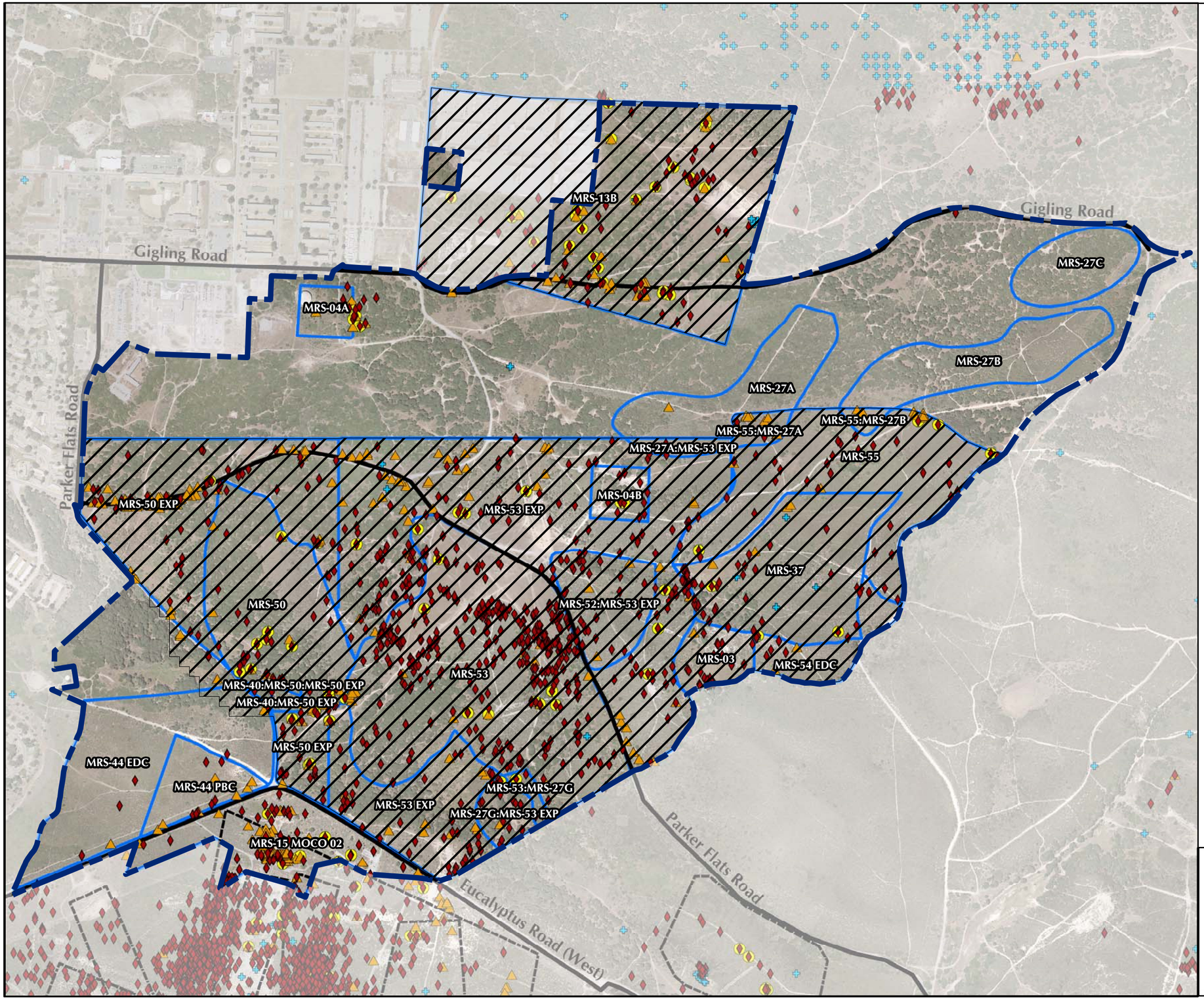
Parker Flats MRA Release Profile MEC and MD Locations

FORA ESCA RP
Monterey County, California

Figure 5.3-1



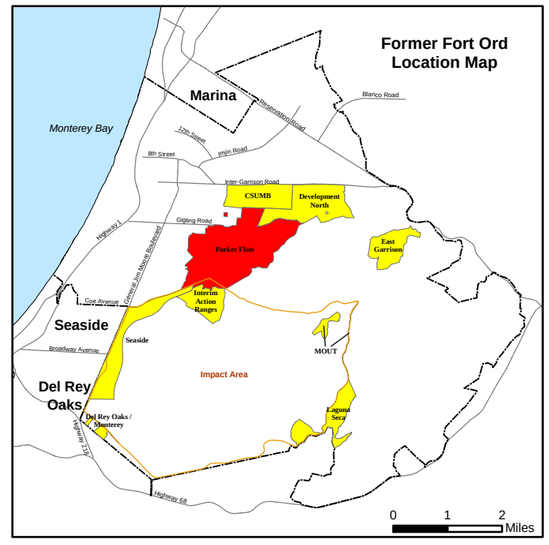
Legend

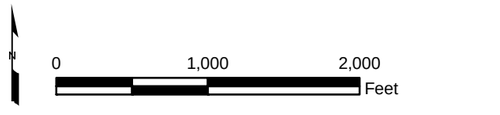
- Munitions Response Area
- Munitions Response Site
- MRS-27A
- Firing Range
- Major Road
- Phase I Parker Flats RI/FS

MEC Type

- Unexploded Ordnance (UXO)
- Discarded Military Munition (DMM)
- Insufficient Data (ISD)
- Burial Pit Containing MEC

Note: MEC locations may include more than one item.





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WESTON SOLUTIONS
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Parker Flats MRA Release Profile MEC Locations

FORA ESCA RP
Monterey County, California

Figure 5.3-2

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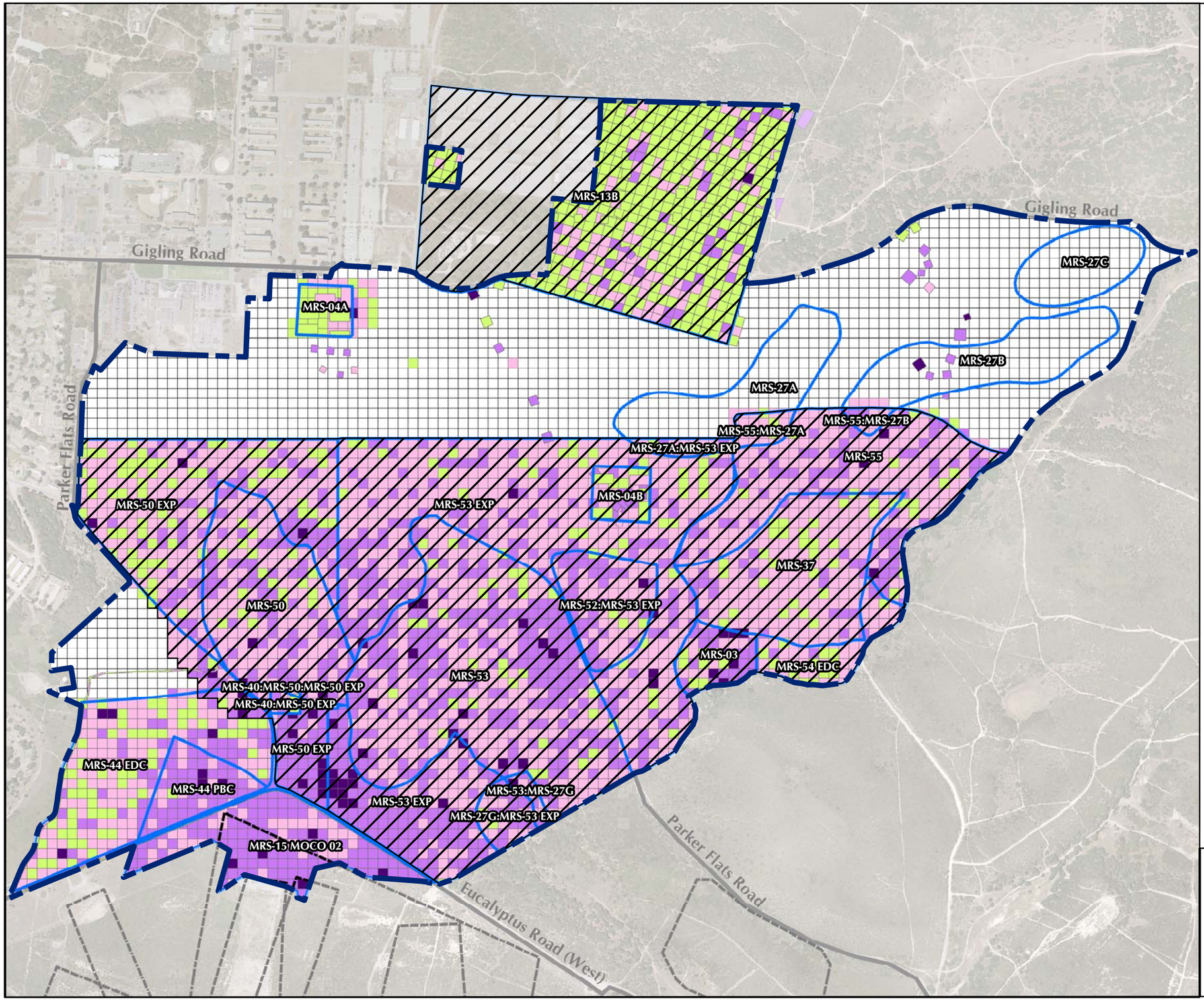


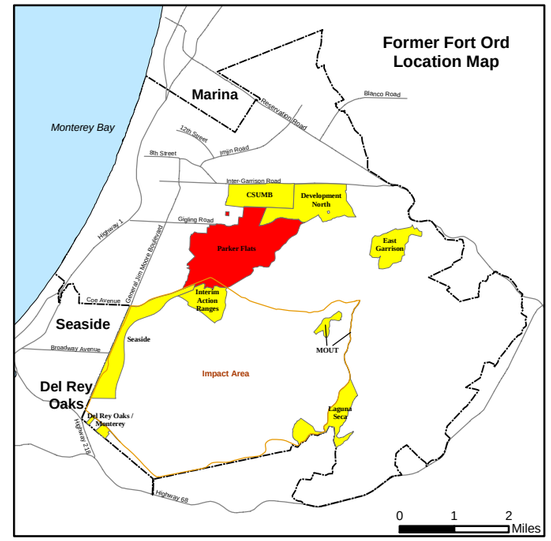
Legend

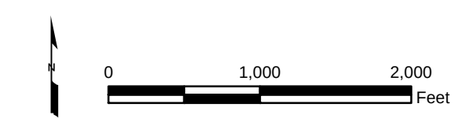
- Munitions Response Area
- MRS-27A — Munitions Response Site
- Firing Range
- Major Road
- Phase I Parker Flats RI/FS

Munitions Debris (MD) by Weight (total pounds per grid)

- No Data
- 0
- < 10
- 10 to 100
- > 100

Note: Munitions Debris (MD) includes scrap related to small arms ammunition.





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Parker Flats MRA Release Profile MD Locations

FORA ESCA RP
Monterey County, California

Figure 5.3-3

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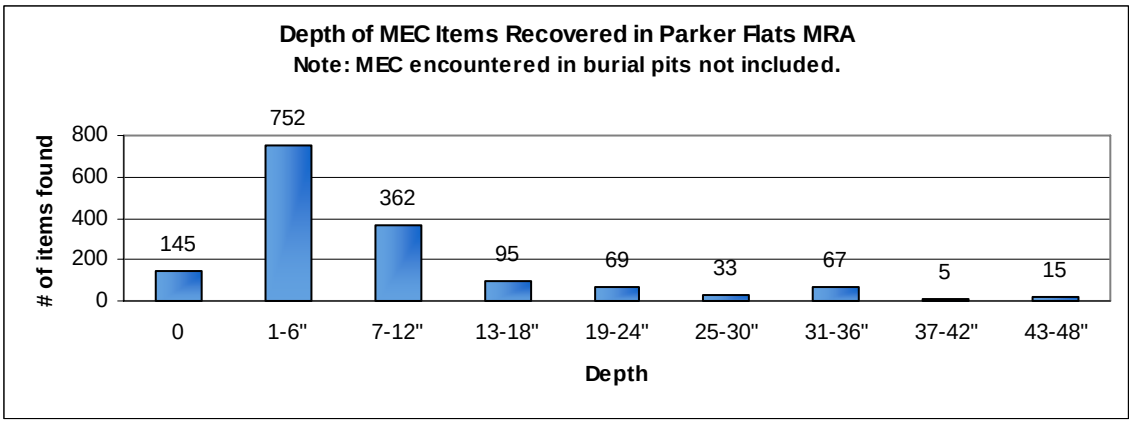

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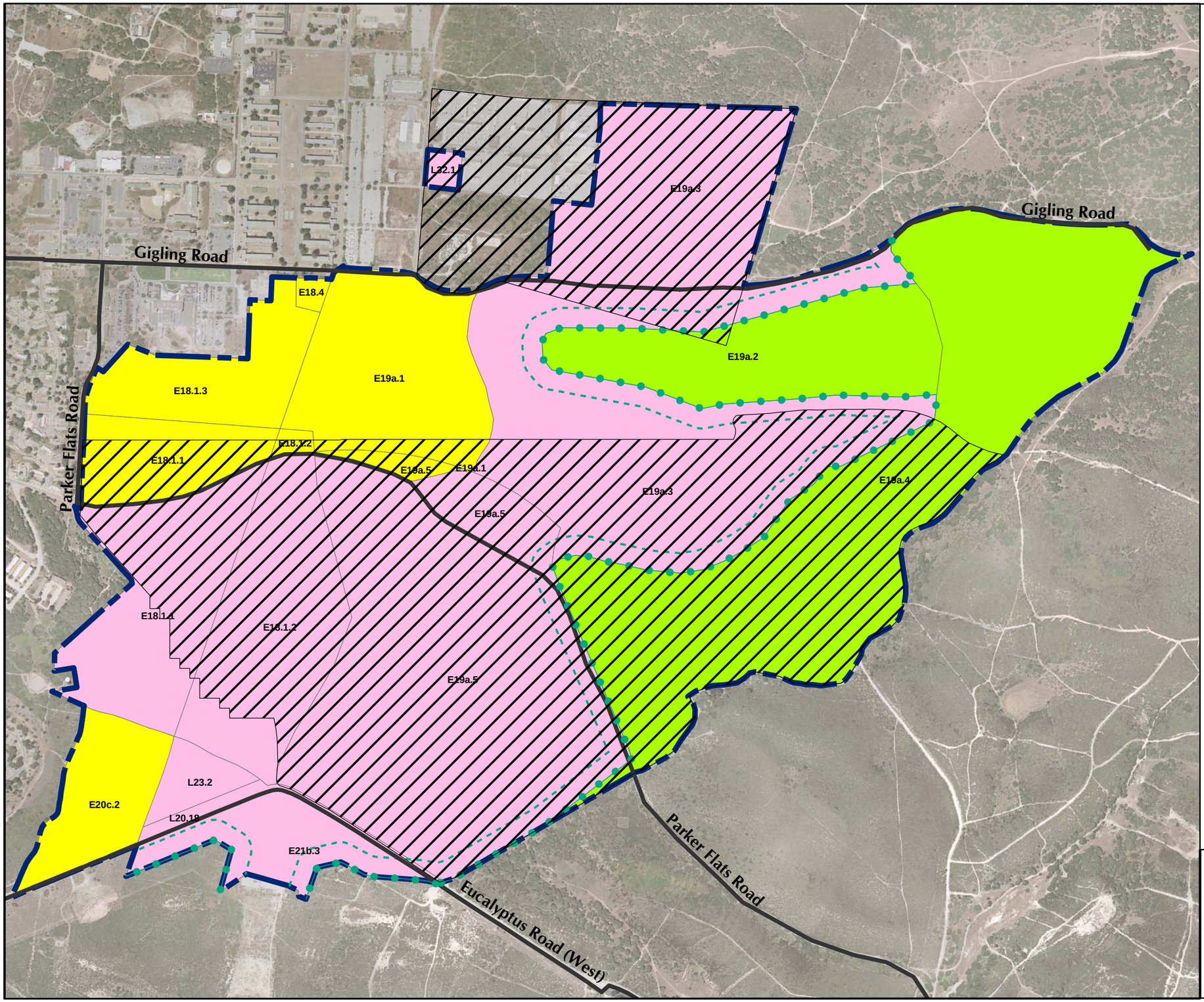
Parker Flats MRA
Distribution of MEC
Recovered by Depth Interval

FORA ESCA RP
Monterey County, California

Figure 5.3-4

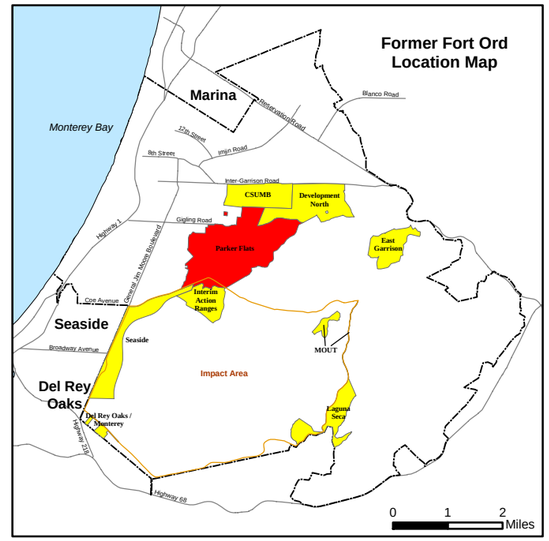


Legend

- Munitions Response Area
- Major Road
- E19a.1 USACE Parcel
- Phase I Parker Flats RI/FS

Future Land Use

- Residential
- Non-Residential
- Habitat Reserve
- Borderland Interface
- 200-Foot Buffer from Borderland Interface



N

0 1,000 2,000 Feet

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Parker Flats MRA
Land Use Profile
Reuse Plan

FORA ESCA RP
Monterey County, California

Figure 5.4-1

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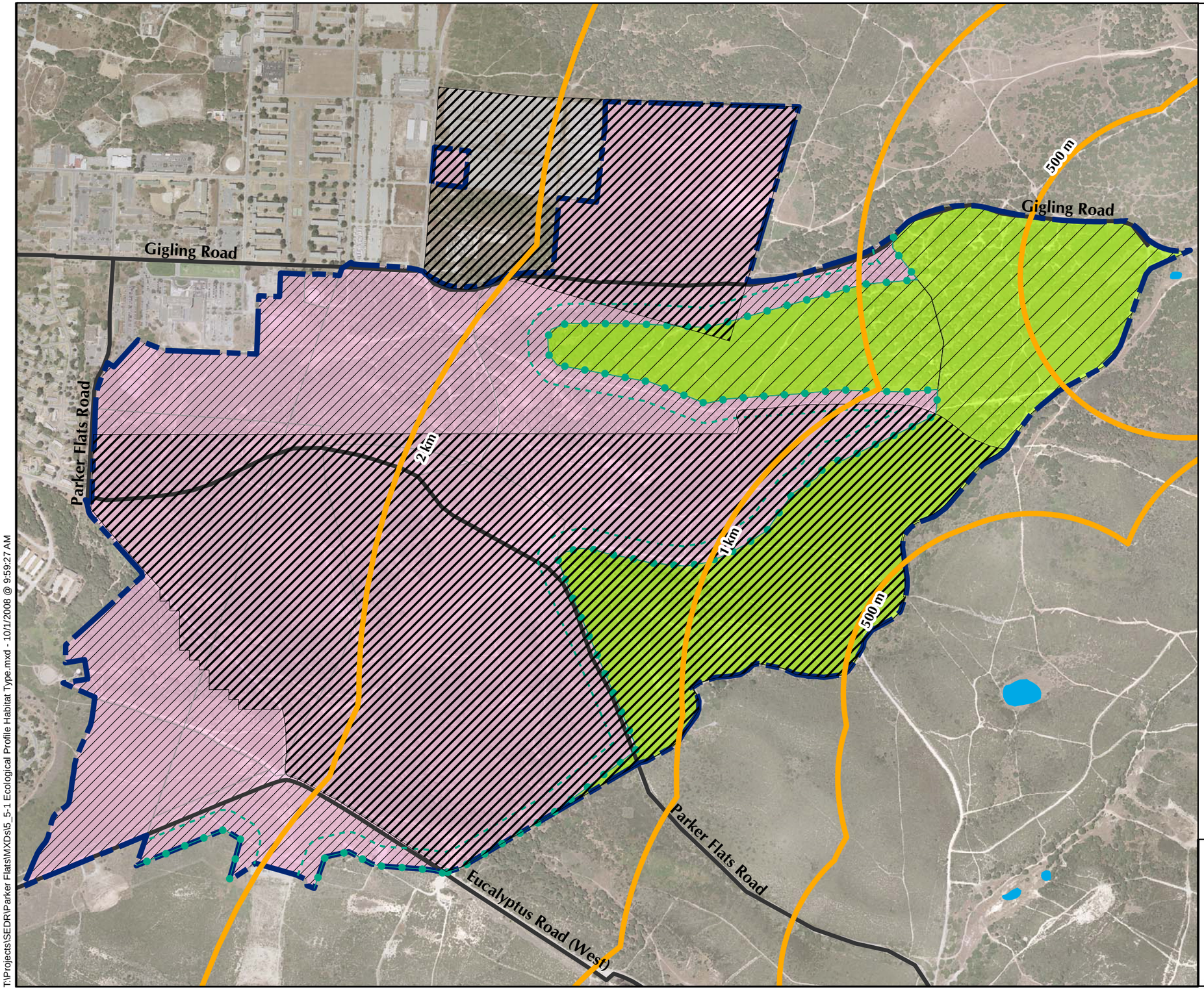
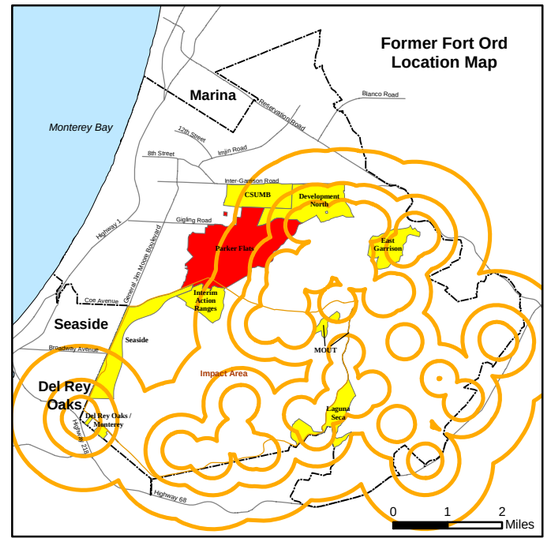


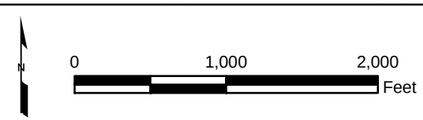
Legend

- Munitions Response Area
- California Tiger Salamander Buffer
- Major Road
- Borderland Interface
- 200-Foot Buffer from Borderland Interface
- Aquatic Features
- Phase I Parker Flats RI/FS

Habitat Management Plan Category

- Development (includes future Residential and Non-Residential areas)
- Development with Reserve or Restrictions
- Habitat Corridor
- Habitat Corridor with Development
- Habitat Reserve





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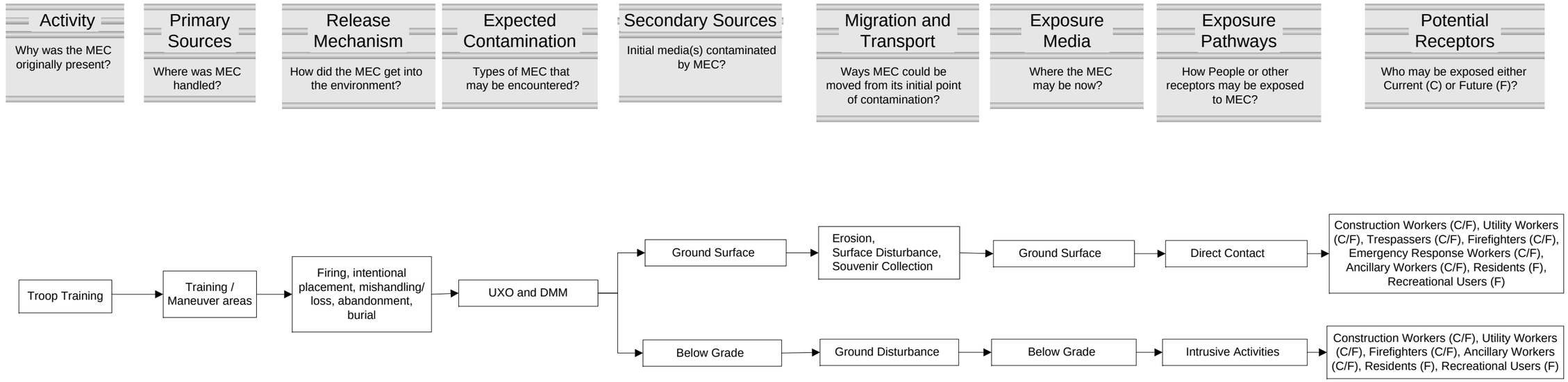
Westcliffe Engineers, Inc.

Parker Flats MRA
Ecological Profile
Habitat Type
FORA ESCA RP
Monterey County, California

Figure 5.5-1

T:\Projects\SEDR\Parker Flats\MXDs\5_5-1 Ecological Profile Habitat Type.mxd - 10/1/2008 @ 9:59:27 AM



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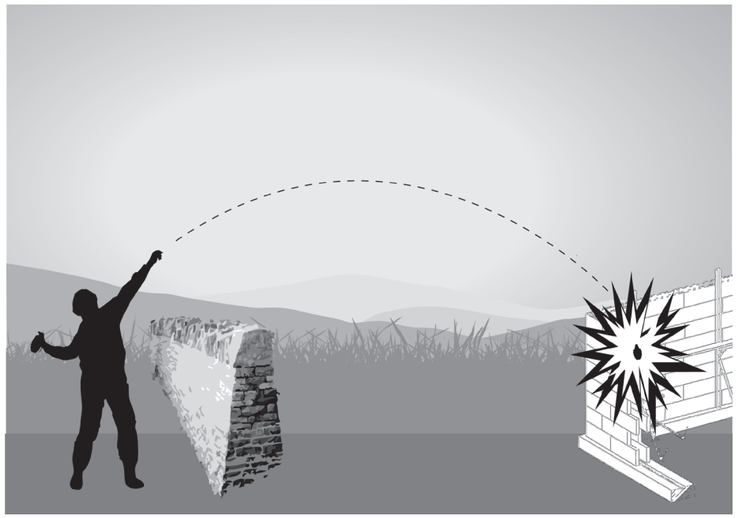
Parker Flats MRA
Pathway Analysis
Flowchart

FORA ESCA RP
Monterey County, California

Figure 5.6-1



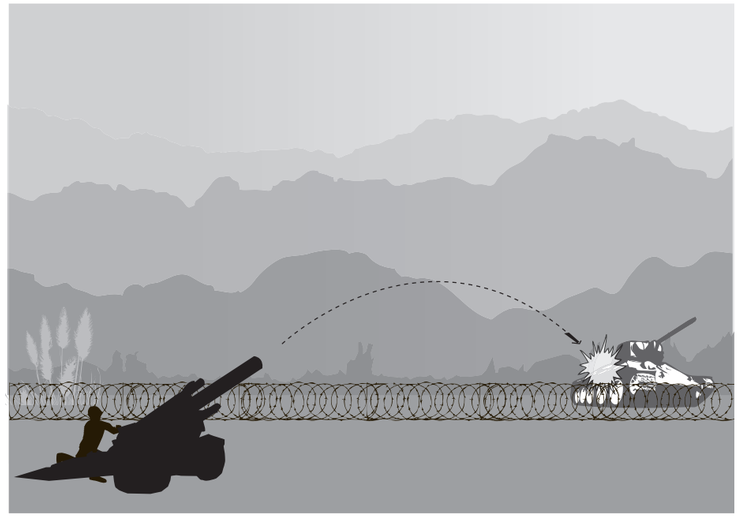
Thrown Ordnance

Burial / Mishandling / Loss

Firing

Direct Fire

Indirect Fire



Indirect Fire

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Parker Flats MRA
Release Mechanism Illustrations

FORA ESCA RP
Monterey County, California

Figure 5.6-2

APPENDIX C

Munitions Response Activity Evaluation Checklists

Appendix C
Munitions Response Activity Evaluation Checklists
Part 1: Literature Review

	Yes	No	Inconclusive
TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED			
1. Is there evidence that the site was used as an impact area (i.e., fired military munitions such as mortars, projectiles, rifle grenades, or other launched ordnance)?			
Sources reviewed and comments:			
2. Is there historical evidence that training involved use of High Explosive (HE) or Low Explosive (LE) items?			
Sources reviewed and comments:			
3. Is there historical evidence that training involved use of pyrotechnic and/or smoke-producing items (e.g., simulators, flares, smoke grenades) but not explosives?			
Sources reviewed and comments:			
DEVELOPMENT AND USE OF SURROUNDING AREA			
4. Does subsequent development or use of the area indicate that military munitions would have been used at the site?			
Sources reviewed and comments:			
5. Does use of area surrounding the site indicate that military munitions would have been used at the site?			
Sources reviewed and comments:			

Appendix C
Munitions Response Activity Evaluation Checklists
Part 1: Literature Review

	Yes	No	Inconclusive
ESTABLISHMENT OF SITE BOUNDARIES			
6. Is there evidence of training areas on aerial photographs that could be used to establish site boundaries?			
Sources reviewed and comments:			
7. Is there evidence of training on historical training maps that could be used to establish boundaries?			
Sources reviewed and comments:			
8. Should current boundaries be revised?			
Sources reviewed and comments:			
RESULTS OF LITERATURE EVALUATION			
9. Does the literature review provide sufficient evidence to warrant further investigation?			
Sources reviewed and comments:			

Appendix C
Munitions Response Activity Evaluation Checklists
Part 2: Removal Evaluation

	Yes	No	Inconclusive
HISTORICAL INFORMATION			
1. Is there evidence that the site was used as an impact area (i.e., fired military munitions such as mortars, projectiles, rifle grenades, or other launched ordnance)?			

Sources reviewed and comments:

References:

2. Is there evidence that training involved use of explosive items?			

Sources reviewed and comments:

References:

3. Is there evidence that training involved use of pyrotechnic and/or smoke-producing items (e.g., simulators, flares, smoke grenades) but not explosives?			

Sources reviewed and comments:

References:

REMOVAL RESULTS

4. Was removal performed within the appropriate area?			

Sources reviewed and comments:

References:

Appendix C
Munitions Response Activity Evaluation Checklists
Part 2: Removal Evaluation

	Yes	No	Inconclusive
5. Were the type(s) of items found consistent with the type of training identified for the site?			

Sources reviewed and comments:

References:

6. Were the type(s) of items found consistent with the era(s) in which training was identified?			

Sources reviewed and comments:

References:

7. Was High Explosive (HE) fragmentation found?			

Sources reviewed and comments:

References:

8. Were HEs found?			

Sources reviewed and comments:

References:

Appendix C
Munitions Response Activity Evaluation Checklists
Part 2: Removal Evaluation

	Yes	No	Inconclusive
9. Were Low Explosives (LEs) found?			

Sources reviewed and comments:

References:

10. Were pyrotechnics found?			

Sources reviewed and comments:

References:

11. Were smoke-producing items found?			

Sources reviewed and comments:

References:

12. Were explosive items found (e.g., rocket motors with explosive components, fuzes with explosive components)?			

Sources reviewed and comments:

References:

Appendix C
Munitions Response Activity Evaluation Checklists
Part 2: Removal Evaluation

	Yes	No	Inconclusive
13. Do items found in the area indicate training would have included use of training items with other energetic components?			

Sources reviewed and comments:

References:

14. Were items found in a localized area (possibly the remnants of a cleanup action)?			Inconclusive

Sources reviewed and comments:

References:

SITE INVESTIGATION DESIGN

15. Was the site divided into subareas to focus on areas of common usage, similar topography and vegetation, and/or other unique site features?			

Sources reviewed and comments:

References:

16. Should the site be divided into subareas based on the above features?			

Sources reviewed and comments:

References:

Appendix C
Munitions Response Activity Evaluation Checklists
Part 2: Removal Evaluation

	Yes	No	Inconclusive
17. Should current site boundaries be revised based on sampling results?			

Sources reviewed and comments:

References:

EQUIPMENT REVIEW

18. Was equipment used capable of detecting items suspected at the site at the maximum expected depth?			

Sources reviewed and comments:

References:

19. Was equipment used capable of detecting the types of items (e.g., non-ferrous) suspected at the site?			

Sources reviewed and comments:

References:

20. Do the results of the Ordnance Detection and Discrimination Study (ODDS) indicate that items suspected at the site would have been detected by the instrument used at the time of investigation?			

Sources reviewed and comments:

References:

Appendix C
Munitions Response Activity Evaluation Checklists
Part 2: Removal Evaluation

	Yes	No	Inconclusive
21. Do results of the investigation indicate that suspected items could be detected with a high level of confidence at observed and expected depth ranges?			

Sources reviewed and comments:

References:

22. Were all the instruments used to evaluate the site maintained and calibrated in accordance with associated work plan and manufacturers' specifications?			

Sources reviewed and comments:

References:

DATA PROCESSING AND DATA MANAGEMENT

23. Was the appropriate data processing scheme used for the site, and how were the data processed?			

Sources reviewed and comments:

References:

24. Have the field data been collected and managed in accordance with quality control standards established for the project?			

Sources reviewed and comments:

References:

Appendix C
Munitions Response Activity Evaluation Checklists
Part 2: Removal Evaluation

	Yes	No	Inconclusive
RESULTS OF REMOVAL EVALUATION			
A. Can the data be used to perform a risk assessment?			

Comments:

References:

B. Can the data be used to perform a feasability study?			

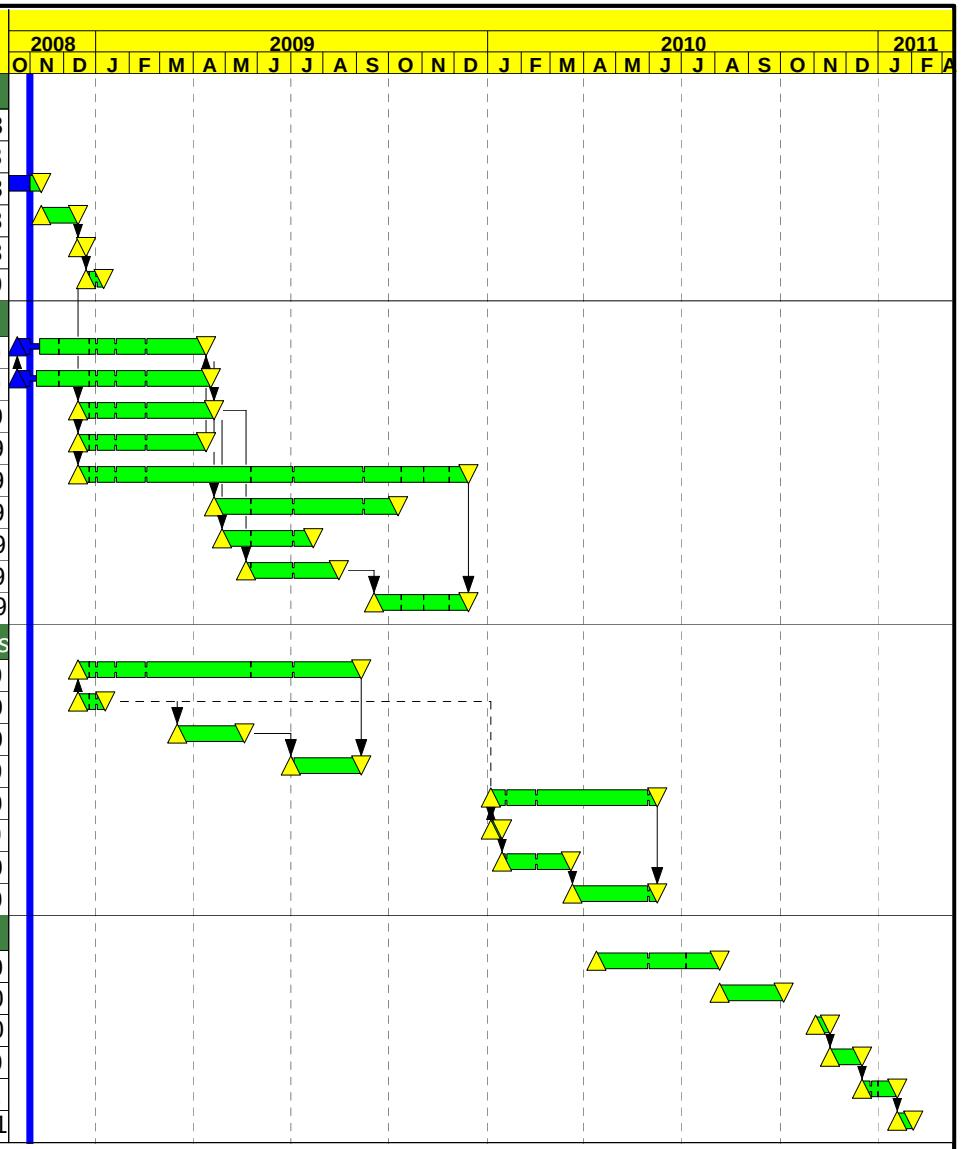
Comments:

References:

APPENDIX D

Anticipated Project Schedule

Activity Description	Duration	Early Start	Early Finish
RI/FS Work Plan - Group 1 (Seaside MRA and Parker Flats MRA Phase II)			
Draft Group 1 RI/FS Work Plan Preparation	144	05NOV07	29MAY08
Regulatory Review	60	29MAY08	28JUL08
Draft Final Group 1 RI/FS Work Plan Preparation	73	29JUL08	10NOV08
Regulatory Review	34	11NOV08	14DEC08
Final Group 1 RI/FS Work Plan Preparation	6	15DEC08	22DEC08
Regulatory Review and Approval	14	23DEC08	07JAN09
MEC Clearance Activities - Parker Flats MRA Phase II			
Boundary and Grid Surveys	116	20OCT08	13APR09
Vegetation Cutting and Removal	121	20OCT08	17APR09
Surface MEC Removal	87	15DEC08	20APR09
Demolition Activities	82	15DEC08	13APR09
Quality Control - Analog	251	15DEC08	14DEC09
Quality Control - Digital	120	21APR09	08OCT09
DGM and Data Analysis	60	28APR09	22JUL09
Subsurface MEC Removal; Reacquisition & Identification	60	21MAY09	14AUG09
Subsurface MEC Removal; Mag and Dig	60	17SEP09	14DEC09
Residential Quality Assurance (RQA) Activities - Seaside and CSUMB Off-Campus MRAs			
RQA - Seaside MRA	184	15DEC08	04SEP09
Pilot Test (RQA-SEA.4)	18	15DEC08	09JAN09
Agency Consultation	45	18MAR09	19MAY09
Remaining RQA, if required	47	01JUL09	04SEP09
RQA - CSUMB Off-Campus MRA	109	04JAN10	08JUN10
Pilot Test (RQA-CSUMB)	8	04JAN10	13JAN10
Agency Consultation	45	14JAN10	19MAR10
Remaining RQA, if required	56	22MAR10	08JUN10
RI/FS Report - Group 1 (Seaside MRA and Parker Flats MRA Phase II)			
Draft Group 1 RI/FS Report Preparation	80	13APR10	04AUG10
Regulatory Review	60	05AUG10	03OCT10
Draft Final RI/FS Report Preparation	10	03NOV10	16NOV10
Regulatory Review	30	17NOV10	16DEC10
Final Group 1 RI/FS Report Preparation	20	17DEC10	18JAN11
Regulatory Review and Approval	15	19JAN11	02FEB11



Start Date	01APR07
Finish Date	14JUL14
Data Date	31OCT08
Run Date	10NOV08 12:02

Early Bar
Progress Bar
Critical Activity

1031

Sheet 1 of 1

FORA ESCA Remediation Program
Anticipated Project Schedule

Date	Revision	Checked	Approved

APPENDIX E

Response to Comments

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Judy Huang of EPA, dated July 9, 2008

No.	Comment Type / Report Section	Comment/Response
1	EPA General Comment	**Comment**: The Draft Group 1 Remedial Investigation/Feasibility Study Work Plan, Seaside Munitions Response Area and Parker Flats Munitions Response Area Phase II, dated May 23, 2008, (hereinafter referred to as the Dft GP 1 RI/FS WP, Seaside & Parker Flats MRAs, Phase II), presents the Quality Control (QC) process to be used during the execution of the RI/FS in a fragmented manner. It is understood that some of this fragmentation is due to the format of the document that is prescribed by the RI/FS requirements. However, there is no identifiable portion of the document or its appendices that contains a listing of all of the activities to be evaluated by QC, the evaluation criteria for each activity evaluated, and the associated pass/fail criteria. A listing of this information would be very valuable for use during the execution of the work plan and would assist those evaluating the quality of these processes in their efforts. Please provide a table/chart that provides this information in an appropriate location in the body of the Dft GP 1 RI/FS WP, Seaside & Parker Flats MRAs, Phase II. **Response**: Quality control (QC) operations for Geophysics and Unexploded Ordnance (UXO) operations are defined in Section 5, Section 11, and Appendix E (Quality Assurance Project Plan) of Volume 2 of the Group 1 Remedial Investigation/Feasibility Study (RI/FS) Work Plan. The QC components in the Group 1 RI/FS Work Plan related to Geophysics and UXO operations have been consolidated into Appendix E, leaving Section 11 as the overarching Quality Control Plan. The QC components in Section 5 have been maintained, but now reference Appendix E. A table has also been incorporated into Appendix E that presents a quick reference for UXO and Geophysics QC operations.
2	EPA General Comment	**Comment:** The Draft GP 1 RI/FS WP, Seaside & Parker Flats MRAs, Phase II, refers to a number of teams throughout the document and its appendices. In most instances, the makeup of these teams is not provided. Some of the teams listed include: Excavation Team, UXO Team, UXO Intrusive Team, Brush Cutting Team, Geophysical Team, Chipper Team, Reacquisition Team, Dig Team, Field Team, Mechanical Vegetation Cutting Team, and ESCA RP Team. Some of these teams are defined by function and makeup in the document, but most are not. Please review the teams listed in the Dft GP 1 RI/FS WP, Seaside & Parker Flats MRAs, Phase II, and define the function and make up of each team when first introduced in the text or at another appropriate location that may be referenced at the first introduction of the team in the text.

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Judy Huang of EPA, dated July 9, 2008

No.	Comment Type / Report Section	Comment/Response
		Response: The definitions or identifications of the members that make up the teams mentioned throughout the report have been added to the document. In addition, the text has been revised to ensure consistent use of the various team names throughout the Group 1 RI/FS Work Plan - Volumes 1 and 2 (including the appendices).
1	EPA Specific Comment – Executive Summary, Sampling and Analysis Plan (Volume 2), Page xv	**Comment:** The next-to-last sentence in the third paragraph of this section on page xv, in referring to the results of the surface sweep, states that, "If significant subsurface MEC (either in high concentration or high risk unexploded ordnance) are discovered during the investigation, the immediate vicinity may be intrusively investigated to ascertain the limits of the condition." The use of the word "may" in this sentence raises a concern as to the criteria that will make this further investigation obligatory. Please revise the cited section of the Executive Summary to state the specific criteria that will be used to determine whether the noted intrusive investigation will be initiated, or reference where this information may be found elsewhere in the document or its appendices. **Response:** This work plan does not contain specific criteria that will be used to determine whether intrusive investigation will be initiated. Therefore, the Executive Summary (as well as corresponding text in Section 4.5.2 of Volume 1 and Sections 2.2.1 and 2.3.7 of Volume 2) has been revised as follows to clarify the approach: "The purpose of the surface sweep in the accessible habitat reserve areas will be to identify and remove anomalies that are on or near the surface (within 3 inches). ***Surface and near-surface finds (MEC and MD) will be fully documented and reviewed by the ESCA RP Team in consultation with the regulatory agencies during the investigation.*** If ***the ESCA RP Team in consultation with the regulatory agencies determine that*** significant ***near-*** ~~sub~~surface MEC (either high concentration or high-risk unexploded ordnance) ***has been*** discovered during the investigation, ***a field variance will be developed to change the investigation approach to include a focused intrusive investigation*** ~~the immediate vicinity may be intrusively investigated~~ to ascertain the limits of the condition."
2	EPA Specific Comment – Volume 1, Work Plan, Section 4.7, Explosives	**Comment**: The last sentence of the first paragraph of this section states that, "Rather, it relies on an assumption that any encounter with MEC will result in an adverse effect, and provides a qualitative description of the explosives safety risk, based on the likelihood of encountering a MEC item combined with the potential of the item to cause a serious injury if detonated." While many of

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Judy Huang of EPA, dated July 9, 2008

No.	Comment Type / Report Section	Comment/Response
	Safety Risk Assessment, Page 4-7	the munitions items that may be found on the sites of concern can detonate, some are items that do not detonate, but burn or eject pyrotechnic cargoes that burn when they function. Based on this differing results of a munitions item functioning due to stimulus from a personal encounter, a better description of the results would be achieved if the words "it functions" replaced the word "detonated" in the cited sentence. Please make this correction here and elsewhere as appropriate in the Dft GP 1 RI/FS WP, Seaside & Parker Flats MRAs, Phase II. **Response**: The sentence has been revised as follows: "Rather, it relies on an assumption that any encounter with MEC will result in an adverse effect, and provides a qualitative description of the explosives safety risk, based on the likelihood of encountering an MEC item combined with the potential of the item to cause a serious injury if ~~detonated~~ ***it functions****."*
3	EPA Specific Comment – Volume 1, Work Plan, Appendix A, Seaside MRA Conceptual Site Model, Section 4.1.3, Historical Military Use, Page 4-2	**Comment**: The last sentence in this section notes that, "It is expected that munitions activity associated with these ranges would have occurred within the firing points." This statement may not be accurate, depending on the definition applied to the term "munitions activity." Please revise this section to include a description of what constitutes "munitions activity," or expand it to better explain the intent of the cited sentence. **Response**: The last sentence of this section has been revised as follows: "According to the known configuration of the ranges, weapons were fired to the east and southeast from these firing points toward the center of the impact area (Figure 4.1-2). It is expected that munitions activity associated with these ranges would have occurred within ***the range fans associated with*** the firing points. ***A munitions activity is intended to include military training activities at or near the range that involve the use or handling of military munitions.***"
4	EPA Specific Comment – Volume 1, Work Plan, Appendix A, Seaside MRA Conceptual Site Model,	**Comment**: This section presents a general discussion of the potential exposure pathways from munitions items that may currently be present on the Seaside MRA. The results of this analysis are referenced as presented in Table 4.6-1, Seaside MRA – Potential Receptors and Exposure Media. The potential receptors listed include Construction Worker, Utility Workers, Trespassers, Firefighters, Emergency Response Workers, Ancillary Workers, Residents, and Recreational Users. The table divides these receptors into two categories,

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Judy Huang of EPA, dated July 9, 2008

No.	Comment Type / Report Section	Comment/Response
	Section 4.6, Seaside MRA Pathway Analysis, Page 4-11	which are Current and Future. The Exposure Media listed is Ground Surface and Below Grade. None of the potential receptors are listed as being potentially exposed to MEC present on the ground surface either in the Current or Future periods. Also, only the Construction Workers, Utility Workers, Firefighters, and Residents are identified as being potentially exposed to MEC present in the subsurface. The Trespassers, Emergency Response Workers, Ancillary Workers, and Recreational Users are listed as having no potential exposure to MEC present on the Ground Surface or in the Subsurface during either time period. No details as to how these determinations were made are provided in the cited section. No MEC removal action short of complete excavation and removal (or screening) of the soil to the potential penetration depths of the munitions used will provide a complete assurance that no MEC remains on the site so treated. Based on this fact, the presence of MEC on and beneath the surface of the Seaside MRA cannot be ruled out, both before and after surface and subsurface removals have been conducted. Therefore, any person entering the site has the potential to contact MEC on the surface, and any person conducting any intrusive activity on the site has the potential to contact subsurface MEC, both prior to and after the removal actions have been completed. Please review the cited section and table and revise them as necessary to present the correct exposure potential for the listed receptors. **Response**: Table 4.6-1 has been revised to include a complete analysis of receptors and potential exposure media/scenarios.
5	EPA Specific Comment – Volume 1, Work Plan, Appendix A, Seaside MRA Conceptual Site Model, Table 4.1-4, Seaside MRA – Historical Military Use, Page 4-17	**Comment**: In the row entitled “Range 23M,” the second bullet in the Description column lists “Dragon Rounds” as having been found on this range. As “Dragon rounds” would be an unfired missile, this is highly unlikely. Please review the cited table and correct it as necessary. **Response**: Although it is agreed that the term Dragon “rounds” may be misleading or incorrect, the statement that they were used or found on Range 23M comes from the Archives Search Report prepared by the USACE in October 1993. The Archives Search Report presents information obtained through historical research at various archives and records holding facilities, interviews with individuals associated with the site or operations, and personal visits to the site. The Archives Search Report indicates that Ordnance Items Found or

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Judy Huang of EPA, dated July 9, 2008

No.	Comment Type / Report Section	Comment/Response
		Utilized on Range 23M were "Dragon missiles (practice and HEAT), 4.2" Mortar." The report does not differentiate between items that were found and items that were used. The term "round" has been revised to include the full nomenclature as reported in the Archive Search Report, but no other changes have been made to the tables.
6	EPA Specific Comment – Volume 1, Work Plan, Appendix A, Seaside MRA Conceptual Site Model, Figure 4.6-1, Seaside MRA Pathway Analysis Flowchart	**Comment**: In the column entitled "Expected MEC Contamination," some of the boxes in the column list "MD" as a possible component. As MD is not a subcomponent of MEC, this is technically an incorrect usage. Either the column heading should be revised to replace the term "MEC" or the MD should be removed from the noted boxes in the column. Please correct this as needed. In addition, the column entitled "Secondary Sources" lists both Ground Surface and Below Grade as the initial media contaminated by MEC. However, the Ground Surface source is not continued to completion on the flowchart, as is the case with the Below Grade category. Please complete the evaluation of this source in the flowchart. **Response**: MD has been removed from the boxes in the analyses. In addition, the figure has been updated to reflect a completed pathway analysis through the four remaining columns for the Ground Surface category.
7	EPA Specific Comment – Volume 1, Work Plan, Appendix B, Parker Flats MRA Conceptual Site Model, Section 5.6, Parker Flats MRA Pathway Analysis, Page 5-10	**Comment**: This section presents a general discussion of the potential exposure pathways from munitions items that may currently be present on the Parker Flats MRA. The results of this analysis are referenced as presented in Table 5.6-1, Parker Flats MRA – Potential Receptors and Exposure Media. The potential receptors listed include Construction Worker, Utility Workers, Trespassers, Firefighters, Emergency Response Workers, Ancillary Workers, Residents, and Recreational Users. The table divides these receptors into two categories, which are Current and Future. The Exposure Media listed is Ground Surface and Below Grade. With the exception of Emergency Response Workers and Residents, all of the potential receptors are listed as being potentially exposed to MEC present on the ground surface, either in the Current or Future periods. An exception is the Recreational User, who is not listed for the Current period. Also, the Trespassers, Emergency Response Workers, Ancillary Workers, and Recreational Users are identified as not being potentially exposed to MEC present in the subsurface. Only the Emergency Response Workers are listed as having no potential exposure to MEC present on the Ground Surface or in the Subsurface during either time period. No details as to how these

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Judy Huang of EPA, dated July 9, 2008

No.	Comment Type / Report Section	Comment/Response
		determinations were made are provided in the cited section. As has previously been noted, no MEC removal action short of complete excavation and removal (or screening) of the soil to the potential penetration depths of the munitions used will provide a complete assurance that no MEC remains on the site so treated. Based on this fact, the presence of MEC on and beneath the surface of the Seaside MRA cannot be ruled out, both before and after surface and subsurface removals have been conducted. Therefore, any person entering the site has the potential to contact MEC on the surface, and any person conducting any intrusive activity on the site has the potential to contact subsurface MEC, both prior to and after the removal actions have been completed. Please review the cited section and table and revise them as necessary to present the correct exposure potential for the listed receptors. **Response**: Table 5.6-1 has been revised to include a complete analysis of receptors and potential exposure media/scenarios.
8	EPA Specific Comment – Volume 1, Work Plan, Appendix B, Parker Flats MRA Conceptual Site Model, Table 5.3-2, Parker Flats MRA Phase II – Removal Activities, Page 5-22	**Comment**: In the row entitled "MRS-15MOCO.2," the fourth bullet in the Summary column has a sentence that states, "This operation identified areas [or an area? Areas is correct] of obstructions/interferences such as asphalt, and material from the Range 45 pad, or telephone poles as SCA (Parsons 2004b)." Either this sentence is very poorly constructed or editorial comments have not been expunged from the table. Please review this table and correct it as necessary. **Response**: The table has been revised and the editorial comment removed.
9	EPA Specific Comment – Volume 1, Work Plan, Appendix B, Parker Flats MRA Conceptual Site Model,	**Comment**: In the column entitled "Expected MEC Contamination," the box in the column list "MD" as a possible component. As MD is not a subcomponent of MEC, this is technically an incorrect usage. Either the column heading should be revised to replace the term MEC or the MD should be removed from the noted box in the column. Please correct this as needed. In addition, the column entitled "Secondary Sources" only lists Below Grade as the initial media contaminated by MEC. However, the Ground Surface

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Judy Huang of EPA, dated July 9, 2008

No.	Comment Type / Report Section	Comment/Response
	Figure 5.6-1, Parker Flats MRA Pathway Analysis Flowchart	source is discussed in Section 5.6.1, Exposure Pathways, and is also referenced in Table 5.6-1, Parker Flats MRA – Potential Receptors and Exposure Media. Please provide an evaluation of this source in the flowchart. **Response**: MD has been removed from the boxes in the analysis. In addition, the figure has been updated to reflect a completed pathway analysis for the Ground Surface category.
10	EPA Specific Comment – Volume 2, Sampling and Analysis Plan, Section 2.2.1, Parker Flats MRA – Phase II Remedial Investigation, Page 2-2	**Comment**: The last sentence in the third paragraph of this section, in referring to the results of the surface sweep, states that, "If significant subsurface MEC (either high concentration or high risk unexploded ordnance [UXO]) are discovered during the investigation, the immediate vicinity may be intrusively investigated to ascertain the limits of the condition." The use of the word "may" in this sentence raises a concern as to the criteria that will make this further investigation obligatory. Please revise the cited section to state the specific criteria that will be used to determine whether the noted intrusive investigation will be initiated, or reference where this information may be found elsewhere in the document or its appendices. **Response**: This work plan does not contain specific criteria that will be used to determine whether intrusive investigation will be initiated. Therefore, Sections 2.2.1 and 2.3.7 of Volume 2 have been revised as follows to clarify the approach: <u>Section 2.2.1</u> "The purpose of the surface sweep in the accessible habitat reserve areas will be to identify and remove anomalies that are on or near the surface (within 3 inches). ***Surface and near-surface finds (MEC and MD) will be fully documented and reviewed by the ESCA RP Team in consultation with the regulatory agencies during the investigation.*** If ***the ESCA RP Team in consultation with the regulatory agencies determine that*** significant ***near-*** ~~sub~~surface MEC (either high concentration or high-risk unexploded ordnance [UXO]) ***has been*** discovered during the investigation, ***a field variance will be developed to change the investigation approach to include a focused intrusive investigation*** ~~the immediate vicinity may be intrusively investigated~~ to ascertain the limits of the condition." <u>Section 2.3.7</u> "Any MEC items encountered on the surface will be immediately reported to the SUXOS, surveyed with a GPS unit for documentation purposes, and handled in accordance with the proper handling procedures. If an anomaly is

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Judy Huang of EPA, dated July 9, 2008

No.	Comment Type / Report Section	Comment/Response
		detected using analog instruments, the UXO Technician will investigate the anomaly to a depth of 3 inches. ~~If MEC items are recovered during this task this information will be noted and additional investigation will be proposed for this area.~~ If the anomaly cannot be located within the top 3 inches of soil surface, the soil will be replaced and the location will be flagged and surveyed using a GPS instrument***, if coverage is available. In the event that GPS coverage is not available, the anomaly will be marked on the grid map and the coordinates will be manually entered***. The SUXOS will summarize a list of anomalies that could not be fully investigated and/or areas where MEC was found that require additional investigation. ***Surface and near-surface finds (MEC and MD) will be fully documented and reviewed by the ESCA RP Team in consultation with the regulatory agencies during the investigation. If the ESCA RP Team in consultation with the regulatory agencies determine that significant near-surface MEC (either high concentration or high-risk UXO) has been discovered during the investigation, a field variance will be developed to change the investigation approach to include a focused intrusive investigation to ascertain the limits of the condition.***"
11	EPA Specific Comment – Volume 2, Sampling and Analysis Plan, Section 2.3.5.1, Excavation of Digitally Reacquired Anomalies, Page 2-9	**Comment**: The last sentence in this section states, "If MEC are encountered that are suspected of containing unknown filler, MEC extinction will be conducted in accordance with the SOP for MEC with Unknown Filler presented in Appendix D of this G1 SAP." Please explain the reason for the use of the word "extinction" in this sentence and what it entails. **Response**: The word extinction has been replaced with ***disposition*** in the text. The activities associated with disposition of the MEC items suspected of containing unknown fillers are described in Appendix D (the SOP for MEC with Unknown Filler), as described in the text.
12	EPA Specific Comment – Volume 2, Sampling and Analysis Plan, Section 5.25, Geophysical QC Surveys, Page 5-19	**Comment**: In the three sub-elements (QC-1, QC-2, and QC-3) of the first paragraph of this section, the basic concepts of these three QC steps are identified. However, no specific resurvey percentage (or reference as to where this may be found elsewhere in the document or its appendices) is provided for QC-2 and QC-3. Please provide the percentages to be resurveyed, a discussion of how they will be resurveyed, a discussion of how they will be determined, or a reference as to where these may be found elsewhere in the Dft GP 1 RI/FS WP, Seaside & Parker Flats MRAs, Phase II, or its appendices. **Response**: The three introductory bullets in Section 5.25 identifying the three sub-

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Judy Huang of EPA, dated July 9, 2008

No.	Comment Type / Report Section	Comment/Response
		elements were revised to identify the percentages for QC: QC-1: ***Analog*** verification of anomaly removal at ***100% of the anomalies*** ~~each anomaly~~ selected for excavation. QC-2: Digital resurveying of ***an area greater than or equal to 16% of the DGM*** ~~a percentage of the~~ investigation areas. QC-3: Analog resurveying of ***at least*** 10% ~~a percentage~~ of each ***100-ft by 100-ft*** grid. The three unnumbered subsections immediately following these bullets in Section 5.25 describe each of the sub-elements. These subsections have been updated to clarify percentages and area determination.
13	EPA Specific Comment – Volume 2, Sampling and Analysis Plan, Appendix B, Parker Flats MRA Phase II – Types of MEC Removed and Hazard Classification, Page B-2	**Comment**: The table lists an item as follows: "High explosive, 40 mm (model unknown)." It is unclear as to whether this is a cartridge or projectile. Please revise the entry to provide this information, if available. **Response**: This information was obtained from the Army's database. Based on a similar comment provided by the EPA on the Draft SEDR, the following footnote has been added to the table: "***Munitions descriptions have been taken directly from the Army's MMRP Database and/or other historical documents. Any errors in terminology, filler type, and/or discrepancies between model number and caliber/size are a result of misinformation from the data sources.***"

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Judy Huang of EPA, dated July 9, 2008

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Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Gail Youngblood of the Army, dated June 30, 2008

No.	Comment Type / Report Section	Comment/Response
1	Army Specific Comment, P.1-3, Section 1.3.1, last paragraph	**Comment**: The last sentence should be revised to clarify that the consultations resulted in biological opinions (BOs) that allow impacts to and incidental take of listed species during MEC remedial activities but require mitigation measures to be implemented during the munitions response activities to reduce and minimize impacts to the protected species and their habitats. **Response**: A sentence has been added to the end of the paragraph to provide clarification: "To remain consistent with the federal Endangered Species Act (ESA), the Army has completed consultations with the United States Fish and Wildlife Service (FWS) on the Army's predisposal actions, including cleanup of MEC. These consultations have resulted in biological opinions (BOs) that include endangered species incidental take permits. ***These permits allow impacts to and incidental take of listed species during MEC cleanup activities, but require mitigation measures to be implemented during the MEC cleanup activities to reduce and minimize impacts to the protected species and their habitats."***
2	Army Specific Comment, p.2-5, Section 2.3.2 Future Land Use	**Comment**: In addition to the 1997 Fort Ord Base Reuse Plan, the 2002 *Assessment East Garrison – Parker Flats Land Use Modifications* is applicable and should be introduced in this section. **Response**: The following text has been added to Section 2.3.2 regarding the future land use for the Seaside and Parker Flats MRAs: ***"The future land uses are primarily based upon the Fort Ord Base Reuse Plan, adopted by FORA on June 13, 1997 (FORA 1997). Other sources of future land use information include public benefit conveyance, negotiated sale requests, transfer documents, the Installation-Wide Multispecies Habitat Management Plan (HMP; USACE 1997), and the Assessment East Garrison – Parker Flats Land Use Modifications, Fort Ord, California (Zander 2002)."***
3	Army Specific Comment, p.3-1, Section 3.2 Parker Flats MRA Phase II Evaluation	**Comment**: There is a 1.1-acre portion of MRS-13B that overlaps parcel E19a.2. This area was called "MRS-13B Habitat Reserve" in the Final Track 2 Munitions Response RI/FS for the Parker Flats MRA (Phase I). No MEC item was recovered from the MRS-13B Habitat Reserve during the subsurface MEC removal that was previously conducted. Remedial investigation and risk assessment for this area are complete and documented in the final Track 2 RI/FS report. However, as described in the feasibility study (FS), Section 2.1.1 Assessment of Reuse Areas for FS Analysis, this area was not included in the FS (therefore the subsequent Proposed Plan) due to its small size. A

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Gail Youngblood of the Army, dated June 30, 2008

No.	Comment Type / Report Section	Comment/Response
		decision was made that an evaluation of remedial alternatives (if response is required) for the MRS-13B Habitat Reserve should be conducted when the rest of the habitat reserve property (E19a.2) is evaluated in an RI/FS and ROD. Please reflect this information and include the MRS-13B Habitat Reserve Reuse Area in the Group 1 FS. **Response**: The 1.1-acre portion of MRS-13B that extends into the Habitat Reserve area of the Parker Flats MRA Phase II will be included in the FS analysis conducted as part of the Group 1 RI/FS.
4	Army Specific Comment, p.4-5, Section 4.4 RQA Pilot Study	**Comment**: Please state whether this pilot study is intended to satisfy the requirement of the ESCA for a RQA pilot study. **Response**: The text has been revised as follows: "In an effort to satisfy regulatory concerns, ~~a QA process~~ ***the RQA process*** was developed ~~that will~~ to allow the regulators to gain comfort with the acceptability of a parcel, where MEC removal was conducted, for residential use (and other sensitive uses). ***As specified in the ESCA, FORA and their response contractor were tasked to develop an RQA Pilot Study, which includes recommending areas for inclusion in the study and developing success criteria to be used by EPA and DTSC to determine if and when the RQA process will be applied to other designated residential parcels covered by the ESCA. This effort is also intended to satisfy the requirements of the ESCA for an RQA pilot study.*** The relevance and usefulness of the RQA process will be tested in the RQA Pilot Study. The results of the Pilot Study will be considered in developing and evaluating remedial alternatives in the FS."
5	Army Specific Comment, p.4-6, Section 4.5.2 Parker Flats MRA Phase II	**Comment**: To reduce potential confusion, please clarify that "non-residential" means non-residential development, and does not include habitat reserve. Please also consider "habitat reserve" as a land use category name since "habitat reserve" was used in Volume 2, Section 2.1 and Figure A-1. **Response**: The text has been revised to state "Residential and Non-Residential ***Development*** Areas" and "Habitat ***Reserve*** Areas."

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Gail Youngblood of the Army, dated June 30, 2008

No.	Comment Type / Report Section	Comment/Response
6	Army Specific Comment, p.4-7, Section 4.5.2 Parker Flats MRA Phase II, last paragraph	**Comment**: This section describes that the surface sweep will involve investigation of shallow anomalies within 3 inches. Please describe if deeper anomalies that are not completely investigated will be documented. Same comment applies to Volume 2, p.2-2, Section 2.2.1. **Response**: This work plan does not contain specific criteria that will be used to determine whether intrusive investigation will be initiated. Therefore, Section 4.5.2 of Volume 1 has been revised as follows to clarify the approach: "The purpose of the surface sweep in the habitat ***reserve*** areas will be to identify and remove anomalies that are on or near the surface (within 3 inches). ***Surface and near-surface finds (MEC and MD) will be fully documented and reviewed by the ESCA RP Team in consultation with the regulatory agencies during the investigation.*** If ***the ESCA RP Team in consultation with the regulatory agencies feel that*** significant ***near-*** ~~sub~~surface MEC (either high concentration or high-risk unexploded ordnance) ***has been*** discovered during the investigation, ***a field variance will be developed to change the investigation approach to include a focused intrusive investigation*** ~~the immediate vicinity may be intrusively investigated~~ to ascertain the limits of the condition."
7	Army Specific Comment, p.4-11, Section 4.10 Community Relations, first paragraph	**Comment**: The Community Involvement and Outreach Program (CIOP) Plan does not amend the Fort Ord Community Relations Plan; however, it is an enhancement to this existing plan. Please revise the sentence as follows: "The CIOP Plan is an addendum to the Army's former Fort Ord Community Relations Plan." Please also see the Army's comments to similar text that appeared in Draft CIOP Plan. **Response**: The text has been revised to state that the CIOP Plan is an ***addendum*** to the Army's former Fort Ord Community Relations Plan.
8	Army Specific Comment, p.4-12, Section 4.10.3	**Comment:** **a.** Bullet 1. It is indicated "all CSUMB faculty, staff, and students residing in campus housing will receive a copy of the newsletter while school is in session." should be re-evaluated. Suggestion to instead describe the actions that FORA and/or the ESCA RP Team will take to reach out to the CSUMB. **b.** Bullet 1. It is indicated that the FORA newsletters will be posted on the Army's Fort Ord cleanup website. It would be more accurate to state that FORA newsletters that are posted on FORA's website are available by hyperlink to FORA's website from

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Gail Youngblood of the Army, dated June 30, 2008

No.	Comment Type / Report Section	Comment/Response
		www.fortordcleanup.com/community/factsheets.asp. **c.** Bullet 5. It is indicated that FORA factsheets will be included into the Information Repositories. Information Repositories are maintained by the Army and typically does not include factsheets. Please revise the text to the effect. **d.** Bullet 8. The text as written can be mis-interpreted as suggesting that FORA and/or the ESCA RP Team is maintaining the Fort Ord Administrative Record and the Information Repositories. Please revise the text to the effect that FORA and/or the ESCA RP Team will submit RI-related documents to the Army for inclusion in the Administrative Record. **Response:** **a and b.** The text in the first bullet has been revised as follows to address comments a and b: • Publish articles in the quarterly newsletter. Newsletters will be mailed to all interested parties in adjacent communities. Additional interested parties on the FORA ESCA RP mailing list will also receive the newsletters. The newsletters will also be posted on the FORA ESCA RP website (http://www.fora.org) and ***a link to newsletters will be provided on*** the Army's Fort Ord Cleanup website (~~www.fortordcleanup.com~~ ***www.fortordcleanup.com/community/factsheets.asp***). ***FORA will work with representatives of CSUMB to ensure they are kept apprised of all ESCA-related cleanup activities and have access to relevant information about the ESCA RP. Information about the FORA ESCA RP website will be made available to representatives of CSUMB allowing them to notify their students, staff, and faculty, as appropriate. Special emphasis will be placed on coordinating with the university concerning when field construction work will affect access routes, CSUMB cross country trails, and other campus sponsored activities. FORA will also participate in CSUMB outreach activities as appropriate.*** **c.** The fifth bullet has been revised as follows: • Publish a fact sheet distributed by direct mail to local residents, community leaders, minority community organizations, and those who have requested to be on the CIOP mailing list. Fact sheets will also be posted on the FORA ESCA RP website, on the Fort Ord Cleanup website, ~~in the Information repositories,~~ and at community involvement activities. **d.** The last bullet has been revised as follows: • ~~Maintain~~ ***Provide copies of RI-related documents to the Army for inclusion in*** the ***Army-maintained*** Information Repositories and

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Gail Youngblood of the Army, dated June 30, 2008

No.	Comment Type / Report Section	Comment/Response
		Administrative Record ~~to include RI-related documents~~.
9	Army Specific Comment, p.5-1. Section 5.2 Task 2 Community Relations	**Comment:** The last two sentences indicate that the Army's previous versions of Community Relations Plans (CRPs) have been superseded by the current CIOP Plan and the CRP Update Number 3. To clarify, please revise the text to read "The MEC-related community relations programs implemented at the former Fort Ord have been described in the CRP (Army 1998), the CRP Update Number 1 (Army 2000), the CRP Update Number 2 (Army 2001) and the CRP Update Number 3 (Army, 2006). The CIOP Plan is an addendum to the Army's former Fort Ord CRP." **Response:** The paragraph has been revised as follows: "Task 2 includes the efforts related to the preparation and implementation of the CIOP Plan (ESCA RP Team 2008b). Community relations activities serve to keep stakeholders informed of activities at the former Fort Ord and help the supporting agencies respond to community concerns. ~~The previous MEC-related community relations programs implemented at the former Fort Ord were described in the CRP (Army 1998), the CRP Update Number 1 (Army 2000), and the CRP Update Number 2 (Army 2001). These plans have been superseded by the current CIOP Plan and the CRP Update Number 3 (Army 2006).~~ ***The MEC-related community relations programs implemented at the former Fort Ord have been described in the CRP (Army 1998), the CRP Update Number 1 (Army 2000), the CRP Update Number 2 (Army 2001), and the CRP Update Number 3 (Army 2006). The CIOP Plan is an addendum to the Army's former Fort Ord CRP.***"
10	Army Specific Comment, p.5-2, Section 5.5 Task 5 Data Evaluation	**Comment:** This section indicates that the results of this task will be presented to stakeholders prior to proceeding to the risk assessment. Please describe how this coordination will be accomplished. **Response**: The section has been revised as follows: "Task 5 includes refining and updating the CSMs for Group 1 to document additional site characterization results, including physical characteristics, MEC source characteristics, and the nature and extent of contamination in accordance with Task 4.1 of the AOC. The results of this task will be presented to ***state and federal regulators and the Army during regularly scheduled monthly meetings prior to proceeding to the risk assessment. Community stakeholders will be apprised of any changes to the CSM and their potential impacts by way of the most appropriate and timely method***

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Gail Youngblood of the Army, dated June 30, 2008

No.	Comment Type / Report Section	Comment/Response
		(e.g., Community Involvement Workshop meeting, ESCA Community meeting, ESCA newsletter, and/or ESCA Fact Sheet). ~~stakeholders prior to proceeding to the risk assessment.~~"
11	Army Specific Comment, p.5-2, Section 5.6 Task 6 Risk Assessment	**Comment**: This section indicates that the results of this task will be presented to stakeholders prior to proceeding to the development of alternatives. Please describe how this coordination will be accomplished. **Response**: The last paragraph of this section has been revised as follows: "The main purpose of the risk evaluation portion of the Group 1 RI/FS is to provide an estimate of the risks posed by site conditions (i.e., MEC) and to assess whether a past (or planned) removal or remedial action at a site was (or will be) effective in reducing those risks. The results of this task will be presented to ~~stakeholders~~ ***community stakeholders at a community meeting on the Draft RI/FS report***."
12	Army Specific Comment, Table 1 Potential Applicable or Relevant and Appropriate Requirements (ARARs)	**Comment**: Please review the "remarks" column so that they address the planned/anticipated CERCLA actions for the Group 1 MRAs. **Response**: The ARARs table was provided to show the list of potential ARARs considered for the Group 1 RI/FS. These potential ARARs will be further evaluated and refined during Task 10, Remedial Alternatives Evaluation. At this time the "Remarks" column has been revised to replace references to the Army.
13		**Comment**: Please include an acknowledgement of sponsorship pursuant to ESCA Section D.11. **Response:** The following statement has been added to the end of Section 1.0: *"**This effort was sponsored by the Army, Assistant Chief of Staff Installation Management. The content of the information does not necessarily reflect the position or policy of the Government and no official endorsement should be inferred.**"*

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Gail Youngblood of the Army, dated June 30, 2008

No.	Comment Type / Report Section	Comment/Response
14	Army Specific Comment	**Comment**: Please coordinate any outreach activities targeting the Department of Defense (DoD) communities that may be affected by the planned field investigation (Fitch and Marshall housing areas, DoD Center) and associated possible road closures with the BRAC Fort Ord Field Office. Our Point of Contact for this matter is Melissa Broadston at 831-393-1284. **Response**: Outreach activities targeting the DoD communities will be coordinated with Melissa Broadston (or other appropriate BRAC representative). No revisions have been made to the text in response to this comment.
15	Army Specific Comment, p.1-1, Section 1.0. First paragraph	**Comment**: Please replace the phrase "ordnance and explosives" with the more recent term "military munitions." **Response**: The term "ordnance and explosives" has been replaced with the term "military munitions."
16	Army Specific Comment, p.1-2, Section 1.3.1	**Comment**: Please see the Army's comments to similar text that appeared in Draft Summary of Existing Data Report (SEDR), Section 2.2. **Response**: The text has been revised to reflect comments received on the Draft SEDR and incorporated into the Draft Final SEDR submitted in June 2008.
17	Army Specific Comment, p.2-2, Section 2.2.1 Parker Flats MRA Phase II Remedial Investigation	**Comment**: This section discusses that the investigation of residential and non-residential development areas will entail 100% digital geophysical investigation to the depth of detection. While the plan for structure removal was clarified in Appendix C: Building Demolition and Removal Plan, it is not clear how paved areas such as roads will be handled during the investigation. Please provide additional text to clarify. **Response**: Section 2.2.1 was revised as follows: "The investigation areas include property designated for future residential, nonresidential, or habitat reserve. ***Improved roads will not be intrusively investigated.*** Digital geophysical mapping (DGM) investigations, using the Best Available and Appropriate Detection Technology (BADT) will be performed in residential and nonresidential development areas. The investigation of residential and nonresidential development areas will entail 100 percent DGM investigations to the depth of detection. Areas that are not suitable for DGM (e.g., dense oak woodland where data collection is not

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Gail Youngblood of the Army, dated June 30, 2008

No.	Comment Type / Report Section	Comment/Response
		possible) will be investigated using analog detection."
18	Army Specific Comment, p.2-8, Section 2.3.5.1 Excavation of Digitally Reacquired Anomalies	**Comment**: Fourth paragraph discusses inspecting discovered MEC items to confirm that it is MEC, MD or other scrap, and that MD and scrap will be transported offsite for disposal or recycling. Please also discuss whether MD will be inspected and certified free of explosives hazard before it is shipped offsite. **Response**: The following revisions have been made to the paragraph: "The MEC items located will be initially classified as materials potentially presenting an explosive hazard (MPPEH) until the items are fully inspected and can be identified as MEC, MD, or metal scrap. MD and metal scrap will be transported from the investigation area and stored until it can be disposed of by a foundry and/or recycler, where it will be processed through a smelter, shredder, or furnace prior to resale or release. ***Prior to leaving the MRA, the MD and metal scrap will be inspected by a SUXOS and a UXOQCS to verify that it is free from explosives (FFE).*** The MD will be shredded and recycled at an authorized recycler."
19	Army Specific Comment, p.5-21, Section 5.25 Geophysical QC Surveys, QC-2 Geophysical Resurveying	**Comment**: The second paragraph discusses failure criteria of a discovery of an MEC or MEC-like item, or five re-acquirable anomalies. Please clarify whether this QC criteria is applied to each 100' x 100' grid, or to the entire footprint of geophysical investigation. **Response:** The second paragraph has been revised to clarify that the failure criteria is applied to each 100-ft by 100-ft grid or partial grid.
20	Army Specific Comment, Section 7.0 Location Surveys and Mapping Plan	**Comment**: It is our understanding that the ESCA RP Team is in the process of developing a procedure for migrating the munitions response data into the Army's MMRP database, and that you have been coordinating this effort with our MMRP database manager. Please include this procedure into the final version of the Group 1 RI/FS Work Plan to ensure that necessary data is collected throughout the project and available for submission at the end of the project. **Response**: The following information has been added to Section 7.1: *"**The Army has requested that FORA provide final MEC and MD finds, geophysical operations, and MEC demolition activity data. FORA and the Army are working together to identify the data needs to be provided in an agreed upon format. Data transfer from FORA to the Army will occur following the release of the associated final report.**"*

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Gail Youngblood of the Army, dated June 30, 2008

No.	Comment Type / Report Section	Comment/Response
21	Army Specific Comment	**Comment**: Please include a procedure for handling a situation in which possible Army obligations, as defined in the ESCA, are discovered during the remedial investigation. **Response**: A discussion of Army-retained conditions and an outline for the notification procedures to be followed has been added as Section 2.7 of Volume 2 of the Group 1 RI/FS Work Plan. The text reads as follows: ***The ESCA and the AOC identify certain Army-retained conditions for which the Army assumes responsibility. If these conditions are encountered during field operations, FORA is required to notify the Army of their presence in accordance with the guidelines set forth in the ESCA and the Army assumes responsibility. Included in the Army-retained conditions are:*** • ***Radiological material*** • ***Chemical or biological warfare agents*** • ***Natural resource injuries or damages occurring as a result of contamination releases that have occurred due to Army ownership or activities on the MRA except to the extent such injuries are a direct result of FORA's activities on the MRA*** • ***Unknown uninsured conditions, which include the management and cleanup of non-MEC-related hazardous and toxic wastes above insurance parameters*** • ***Perchlorate contamination in soil or groundwater*** ***Recognition of these types of conditions in the field may include, but are not limited to:*** • ***oily, shiny, or saturated soil or free product*** • ***soil with strong chemical odor*** • ***discovery of objects of environmental concern such as underground storage tanks and associated piping, buried drums, etc.*** • ***discovery of suspected debris of environmental concern (i.e.,***

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Gail Youngblood of the Army, dated June 30, 2008

No.	Comment Type / Report Section	Comment/Response
		buried refuse, asbestos-containing pipes, and Transite™) • ***other conditions that vary materially from those documented during previous investigations*** • ***discovery of areas containing high concentrations of spent ammunition*** • ***discovery of bulk explosives*** ***The field personnel involved in fieldwork activities will be briefed on the recognition of these types of conditions in the field and will be instructed to be on the alert for these conditions and to promptly report such conditions to the site manager, if encountered.*** ***If a suspected Army-retained condition is encountered during the field investigation activities, the following procedures will be followed:*** *1.* ***All MEC field activities that may potentially disturb the "suspected" condition will be immediately stopped.*** *2.* ***If there is no immediate danger to personnel, an appropriate exclusion zone will be designated with a marker and/or a barricade will be erected around the suspect area to prevent further soil disturbance in this area.*** *3.* ***If an emergency situation requiring medical attention, containment assistance, or other emergency assistance arises, the emergency procedures specified in the Site Safety and Health Plan (SSHP) provided as Appendix J will be followed.*** 4. ***The site manager for the contractor or subcontractor will immediately notify the appropriate ESCA RP Team representative. The ESCA RP Team representative will notify the Army immediately, and FORA and the appropriate regulatory agencies within 24 hours.***
22	Army Specific Comment, p.12-5, Section 12.3.2.3	**Comment**: **a.** Paragraph #2. The statement that excavated areas will be allowed to revegetate naturally applies to typical mag and dig operations. However, if excavations are larger and disturb more than one acre and more than 100 feet in width, then passive and active restoration with follow-up monitoring will be necessary. This will be evaluated on a case-by-case basis and coordinated with the Army BRAC Office. **b.** Last paragraph. The paragraph states that restoration monitoring will occur in accordance with Chapter 4 of the HMP. However, the requirement

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Gail Youngblood of the Army, dated June 30, 2008

No.	Comment Type / Report Section	Comment/Response
		to monitor vegetation in Habitat Reserve areas is described in Chapter 3 of the HMP. **Response**: **a.** The ESCA RP Team agrees with the Army that natural revegetation applies to typical mag and dig operations as well as digital mapping operations (DGM) operations, which are both being conducted at the Parker Flats MRA Phase II under the Group 1 RI/FS Work Plan. Although the ESCA RP Team does not anticipate conducting excavations that will disturb an area more than one acre and more than 100 feet in width, passive and active restoration with follow-up monitoring will be conducted in accordance with the procedures described in the Habitat Restoration Plan prepared for the Site 39 Inland Ranges. The text has been revised as follows: "Per the HMP, excavated areas will be allowed to revegetate naturally. ***If the excavation disturbs an area more than one acre and more than 100 feet in width, passive and active restoration with follow-up monitoring will be conducted in accordance with the procedures described in the Habitat Restoration Plan prepared for the Site 39 Inland Ranges (Denise Duffy & Associates 2008).*** **b.** The text has been revised to state that vegetation monitoring will occur in accordance with Chapter 3 of the HMP.
23	Army Specific Comment, Appendix D: Standard Operating Procedures	**Comment**: Standard Operating Procedure for MEC with Unknown Filler. Section 5.1 General. Bullet 7 indicates that the standard reporting procedure is for FORA to contact the Presidio of Monterey Police Department (POMPD) who will notify the Technical Escort Unit (TEU). After the property is transferred to FORA, the standard procedure for such notification should be from FORA to local law enforcement agency to the EOD unit assigned to the region. If the EOD unit determines that a response by TEU is needed, it would complete such notification. In addition, FORA should notify the POMPD and the BRAC Fort Ord Field Office when it notifies the local law enforcement agency. **Response**: The SOP has been revised to reflect the notification procedure to be followed after land transfer in the event MEC with unknown filler is found.
24	Army Specific Comment, Appendix F: Residential Quality	**Comment**: Section F-2.1 RQA Pilot Study Test Areas. It is our understanding that the test area RQA-2 contains a portion that may not be developed for residential use (a portion of Parcel E18.1.1, a part of the veterans cemetery project). Please re-assess the suitability of this site for RQA pilot study

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Gail Youngblood of the Army, dated June 30, 2008

No.	Comment Type / Report Section	Comment/Response
	Assurance Pilot Study Work Plan	implementation given the uncertainty in the future use. **Response**: The RQA-2 area and the RQA-1 area have been removed from the work plan as these areas may not be developed for residential use. The area planned for residential use in the CSUMB MRA has been added to the work plan to replace the RQA-1 and RQA-2 areas in the RQA Pilot Study. The Executive Summary presented in Volume 1, applicable sections of Volume 2, and Appendix F of Volume 2 have been revised to reflect this change in scope.
25	Army Specific Comment, Appendix F: Residential Quality Assurance Pilot Study Work Plan	**Comment**: The Army will provide additional review comments on the Residential Quality Assurance Pilot Study Work Plan after regulatory agencies provide their inputs. **Response**: No additional comments have been received to date.
26	Army Specific Comment, Table 5-1, Recovery and Penetration Depths of MEC Previously Encountered in Parker Flats MRA Phase II	**Comment**: One of the footnotes describes MRA as "Munitions Response Site." Please correct this to "Munitions Response Area." **Response**: The footnote description has been changed to "***Munitions Response Area***".
27	Army Specific Comment, Appendix B: MEC Data	**Comment**: The Hazard Classification table describes hazard classification 0 as "Inert MEC that will cause no injury." By definition MEC is explosive in nature, therefore category 0 or "inert" classification is not possible for a MEC item. Classification 0 should be described as "inert munitions item that will cause no injury" instead. **Response**: The description for hazard classification 0 has been revised to read "***inert munitions item that will cause no injury.***"
28	Army Specific Comment, Appendix F: Residential Quality	**Comment**: The legend describes hazard classification 0 as "Inert MEC that will cause no injury." By definition MEC is explosive in nature, therefore "inert" classification is not possible for a MEC item. Classification 0 should be described as "inert munitions item that will cause no injury" instead.

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Gail Youngblood of the Army, dated June 30, 2008

No.	Comment Type / Report Section	Comment/Response
	Assurance Pilot Study Work Plan. Figure F-2	**Response**: The figure has been revised to read "***inert munitions item that will cause no injury.***"
29	Army Specific Comment, Appendix I: Explosives Siting Plan. Section 1.6.1	**Comment**: Detonation Site Blow-In Place. The second to the last bullet discusses that after property transfer, fire risk assessment for planned detonations will be conducted by the City of Seaside Fire Department. Please verify if this is the case since the majority of the investigation area is within the jurisdiction of the Monterey County. **Response:** The second to the last bullet in Section 1.6.1 of Appendix I has been revised as follows: • "Request Presidio of Monterey Fire Department (POM FD) to perform an on-site fire risk assessment. For planned detonations, risk assessments require a 3-day notification and demolition shots require a 5-day notification. POM FD will expedite risk assessments for demolition shots that cannot be delayed. Following property transfer, requirements for risk assessments will be determined by the City of Seaside Fire Department, ***if the detonation is being conducted within the jurisdiction of the City of Seaside, or by the Salinas Rural Fire District, if the detonation is being conducted within the jurisdiction of Monterey County***."
30	Army Specific Comment, Appendix J: Site Safety and Health Plan. Section J-12.4	**Comment**: Offsite Emergency Response Services. Table J-6 Emergency Contacts lists City of Seaside police and fire agencies. Please verify whether Monterey County law enforcement and fire agencies need to be identified, since the majority of the investigation area is within the jurisdiction of the Monterey County. **Response**: The following contact information has been added to Table J-6: Emergency Contacts: ***Salinas Rural Fire District (831) 455-1828*** ***Monterey County Sheriff (831) 755-3801***

Response to Comments
DRAFT Group 1 Remedial Investigation/Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Gail Youngblood of the Army, dated June 30, 2008

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Response to Comments
DRAFT Group 1 Remedial Investigation / Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Marina Equestrian Association, dated September 24, 2008

No.	Comment Type / Report Section	Comment/Response
a.	Specific Comment	**Comment**: We ask that FORA consider opening the Parker Flats MRA as soon as field work is completed and dangers have been removed. Opening the site while paperwork is completed would reduce the time and burden of lost access and continue our present public uses more quickly. **Response**: FORA will work with the regulatory agencies with respect to the Marina Equestrian Association's request to gain access to the Parker Flats MRA as soon as possible following the completion of the fieldwork effort and regulatory documentation and approval.
b.	Specific Comment	**Comment:** Equestrian use should be added to paragraph 2.3.1 as a daily recreational user. **Response:** Equestrian use has been added to paragraph 2.3.1.
c.	Specific Comment	**Comment:** Equestrian use should be included in paragraphs 2.3.1 and 2.3.2 for past, current and future land use. **Response:** Equestrian use has been added to paragraphs 2.3.1 and 2.3.2 as past, current and future land users.
d.	Specific Comment	**Comment**: We wish to provide testimony that current recreational uses of the Parker Flats MRA are not conflicting and all should be accommodated after remediation. These daily recreational users are hikers, joggers, bikers, dog walkers and horse riders. **Response**: FORA will work with the regulatory agencies with respect to the Marina Equestrian Association's request to gain access to the Parker Flats MRA as soon as possible following the completion of the fieldwork effort and

Response to Comments
DRAFT Group 1 Remedial Investigation / Feasibility Study Work Plan, dated May 23, 2008
Review Comments provided by Marina Equestrian Association, dated September 24, 2008

No.	Comment Type / Report Section	Comment/Response
		regulatory documentation and approval. In addition, joggers, dog walkers and horse riders have been added to the list of daily recreational users in the Parker Flats MRA
e.	Specific Comment	**Comment**: We ask to have the Marina Equestrian Center acknowledged, where appropriate, as an historic and future source of users to this area due to its close proximity to Parker Flats and its unique connection to the National Park Service. **Response**: The Marina Equestrian Center will be referenced as a historic and future source of users to the area in the Remedial Investigation/Feasibility Study report to be prepared following the completion of the fieldwork efforts.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

July 09, 2008

Mr. Stan Cook
Fort Ord Reuse Authority
100 12th Street, Building 2880
Marina, CA 93933

Re: EPA comments on the Draft Group 1 Remedial Investigation/Feasibility Study Work Plan, Seaside Munitions Response Area and Parker Flats Munitions Response Area Phase II, dated May 23, 2008

Dear Stan:

Attached are EPA's comments on the *Draft Group 1 Remedial Investigation/Feasibility Study Work Plan, Seaside Munitions Response Area and Parker Flats Munitions Response Area Phase II*, dated May 23, 2008

If you have any questions, please do not hesitate to call me at (415) 972-3681 or e-mail me at huang.judy@epa.gov.

Sincerely,

Judy C. Huang, P.E.
Remedial Project Manager

cc:

Dan Ward (DTSC)
Site Mitigation/Office of Military Facilities
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Sacramento, CA 95826

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Kristie Reimer, AICP
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Ms. Gail Youngblood
Fort Ord Base Realignment and Closure Office
P.O. Box 5008
Monterey, CA 93944-5004

Mr. Thomas Hall (via E-mail)

REVIEW OF THE
DRAFT GROUP 1
REMEDIAL INVESTIGATION/FEASIBILITY STUDY WORK PLAN
SEASIDE MUNITIONS RESPONSE AREA
AND
PARKER FLATS MUNITIONS RESPONSE AREA
PHASE II
FORMER FORT ORD, CALIFORNIA
MAY 23, 2008

GENERAL COMMENTS

1. The Draft Group 1 Remedial Investigation/Feasibility Study Work Plan, Seaside Munitions Response Area and Parker Flats Munitions Response Area Phase II, dated May 23, 2008, (hereinafter referred to as the Dft GP 1 RI/FS WP, Seaside & Parker Flats MRAs, Phase II), presents the Quality Control (QC) process to be used during the execution of the RI/FS in a fragmented manner. It is understood that some of this fragmentation is due to the format of the document that is prescribed by the RI/FS requirements. However, there is no identifiable portion of the document or its appendices that contains a listing of all of the activities to be evaluated by QC, the evaluation criteria for each activity evaluated, and the associated pass/fail criteria. A listing of this information would be very valuable for use during the execution of the work plan and would assist those evaluating the quality of these processes in their efforts. Please provide a table/chart that provides this information in an appropriate location in the body of the Dft GP 1 RI/FS WP, Seaside & Parker Flats MRAs, Phase II.

2. The Dft GP 1 RI/FS WP, Seaside & Parker Flats MRAs, Phase II, refers to a number of teams throughout the document and its appendices. In most instances, the makeup of these teams is not provided. Some of the teams listed include: Excavation Team, UXO Team, UXO Intrusive Team, Brush Cutting Team, Geophysical Team, Chipper Team, Reacquisition Team, Dig Team, Field Team, Mechanical Vegetation Cutting Team, and ESCA RP Team. Some of these teams are defined by function and makeup in the document, but most are not. Please review the teams listed in the Dft GP 1 RI/FS WP, Seaside & Parker Flats MRAs, Phase II, and define the function and makeup of each team when first introduced in the text or at another appropriate location that may be referenced at the first introduction of the team in the text.

SPECIFIC COMMENTS

EXECUTIVE SUMMARY

1. **Sampling and Analysis Plan (Volume 2), Page xv:** The next-to-last sentence in the third paragraph of this section on page xv, in referring to the results of the surface sweep, states that, "If significant subsurface MEC (either high concentration or high risk unexploded ordnance) are discovered during the investigation, the immediate vicinity may be intrusively investigated to ascertain the limits of the condition." The use of the

word "may" in this sentence raises a concern as to the criteria that will make this further investigation obligatory. Please revise the cited section of the Executive Summary to state the specific criteria that will be used to determine whether the noted intrusive investigation will be initiated, or reference where this information may be found elsewhere in the document or its appendices.

VOLUME 1 – WORK PLAN

2. **Section 4.7, Explosives Safety Risk Assessment, Page 4-7:** The last sentence of the first paragraph of this section states that, "Rather, it relies on an assumption that any encounter with MEC will result in an adverse effect, and provides a qualitative description of the explosives safety risk, based on the likelihood of encountering a MEC item combined with the potential of the item to cause a serious injury if detonated." While many of the munitions items that may be found on the sites of concern can detonate, some are items that do not detonate, but burn or eject pyrotechnic cargoes that burn when they function. Based on this differing results of a munitions item functioning due to stimulus from a personal encounter, a better description of the results would be achieved if the words "it functions" replaced the word "detonated" in the cited sentence. Please make this correction here and elsewhere as appropriate in the Dft GP 1 RI/FS WP, Seaside & Parker Flats MRAs, Phase II.

3. **Appendix A, Seaside MRA Conceptual Site Model, Section 4.1.3, Historical Military Use, Page 4-2:** The last sentence in this section notes that, "It is expected that munitions activity associated with these ranges would have occurred within the firing points." This statement may not be accurate, depending on the definition applied to the term "munitions activity." Please revise this section to include a description of what constitutes "munitions activity," or expand it to better explain the intent of the cited sentence.

4. **Appendix A, Seaside MRA Conceptual Site Model, Section 4.6, Seaside MRA Pathway Analysis, Page 4-11:** This section presents a general discussion of the potential exposure pathways from munitions items that may currently be present on the Seaside MRA. The results of this analysis are referenced as presented in Table 4.6-1, Seaside MRA – Potential Receptors and Exposure Media. The potential receptors listed include Construction Workers, Utility Workers, Trespassers, Firefighters, Emergency Response Workers, Ancillary Workers, Residents, and Recreational Users. The table divides these receptors into two categories, which are Current and Future. The Exposure Media listed is Ground Surface and Below Grade.

   None of the potential receptors are listed as being potentially exposed to MEC present on the ground surface, either in the Current or Future periods. Also, only the Construction Workers, Utility Workers, Firefighters, and Residents are identified as being potentially exposed to MEC present in the subsurface. The Trespassers, Emergency Response Workers, Ancillary Workers, and Recreational Users are listed as having no potential exposure to MEC present on the Ground Surface or in the Subsurface during either time

period. No details as to how these determinations were made are provided in the cited section.

No MEC removal action short of complete excavation and removal (or screening) of the soil to the potential penetration depths of the munitions used will provide a complete assurance that no MEC remains on the site so treated. Based on this fact, the presence of MEC on and beneath the surface of the Seaside MRA cannot be ruled out, both before and after surface and subsurface removals have been conducted. Therefore, any person entering the site has the potential to contact MEC on the surface, and any person conducting any intrusive activity on the site has the potential to contact subsurface MEC, both prior to and after the removal actions have been completed.

Please review the cited section and table and revise them as necessary to present the correct exposure potential for the listed receptors.

5. **Appendix A, Seaside MRA Conceptual Site Model, Table 4.1-4, Seaside MRA – Historical Military Use, Page 4-17:** In the row entitled "Range 23M," the second bullet in the Description column lists "Dragon rounds" as having been found on this range. As "Dragon rounds" would be an unfired missile, this is highly unlikely. Please review the cited table and correct it as necessary.

6. **Appendix A, Seaside MRA Conceptual Site Model, Figure 4.6-1, Seaside MRA Pathway Analysis Flowchart:** In the column entitled "Expected MEC Contamination," some of the boxes in the column list "MD" as a possible component. As MD is not a subcomponent of MEC, this is technically an incorrect usage. Either the column heading should be revised to replace the term "MEC" or the MD should be removed from the noted boxes in the column. Please correct this as needed.

   In addition, the column entitled 'Secondary Sources" lists both Ground Surface and Below Grade as the initial media contaminated by MEC. However, the Ground Surface source is not continued to completion on the flowchart, as is the case with the Below Grade category. Please complete the evaluation of this source in the flowchart.

7. **Appendix B, Parker Flats MRA Conceptual Site Model, Section 5.6, Parker Flats MRA Pathway Analysis, Page 5-10:** This section presents a general discussion of the potential exposure pathways from munitions items that may currently be present on the Parker Flats MRA. The results of this analysis are referenced as presented in Table 5.6-1, Parker Flats MRA – Potential Receptors and Exposure Media. The potential receptors listed include Construction Workers, Utility Workers, Trespassers, Firefighters, Emergency Response Workers, Ancillary Workers, Residents, and Recreational Users. The table divides these receptors into two categories, which are Current and Future. The Exposure Media listed is Ground Surface and Below Grade.

With the exception of Emergency Response Workers and Residents, all of the potential receptors are listed as being potentially exposed to MEC present on the ground surface, either in the Current or Future periods. An exception is the Recreational User, who is not listed for the Current period. Also, the Trespassers, Emergency Response Workers, Ancillary Workers, and Recreational Users are identified as not being potentially exposed to MEC present in the subsurface. Only the Emergency Response Workers are listed as having no potential exposure to MEC present on the Ground Surface or in the Subsurface during either time period. No details as to how these determinations were made are provided in the cited section.

As has previously been noted, no MEC removal action short of complete excavation and removal (or screening) of the soil to the potential penetration depths of the munitions used will provide a complete assurance that no MEC remains on the site so treated. Based on this fact, the presence of MEC on and beneath the surface of the Seaside MRA cannot be ruled out, both before and after surface and subsurface removals have been conducted. Therefore, any person entering the site has the potential to contact MEC on the surface, and any person conducting any intrusive activity on the site has the potential to contact subsurface MEC, both prior to and after the removal actions have been completed.

Please review the cited section and table and revise them as necessary to present the correct exposure potential for the listed receptors.

8. **Appendix B, Parker Flats MRA Conceptual Site Model, Table 5.3-2, Parker Flats MRA Phase II – Removal Activities, Page 5-22:** In the row entitled "MRS-15MOCO.2," the fourth bullet in the Summary column has a sentence that states, "This operation identified areas [or an area? areas is correct] of obstructions/interferences such as asphalt, and material from the Range 45 pad, or telephone poles as SCA (Parsons 2004b)." Either this sentence is very poorly constructed or editorial comments have not been expunged from the table. Please review this table and correct it as necessary.

9. **Appendix B, Parker Flats MRA Conceptual Site Model, Figure 5.6-1, Parker Flats MRA Pathway Analysis Flowchart:** In the column entitled "Expected MEC Contamination," the box in the column list "MD" as a possible component. As MD is not a subcomponent of MEC, this is technically an incorrect usage. Either the column heading should be revised to replace the term "MEC" or the MD should be removed from the noted box in the column. Please correct this as needed.

   In addition, the column entitled "Secondary Sources" only lists Below Grade as the initial media contaminated by MEC. However, the Ground Surface source is discussed in Section 5.6.1, Exposure Pathways, and is also referenced in Table 5.6-1, Parker Flats MRA – Potential Receptors and Exposure Media. Please provide an evaluation of this source in the flowchart.

10. **Section 2.2.1, Parker Flats MRA-Phase II Remedial Investigation, Page 2-2:** The last sentence in the third paragraph of this section, in referring to the results of the surface sweep, states that, "If significant subsurface MEC (either high concentration or high risk unexploded ordnance [UXO]) are discovered during the investigation, the immediate vicinity may be intrusively investigated to ascertain the limits of the condition." The use of the word "may" in this sentence raises a concern as to the criteria that will make this further investigation obligatory. Please revise the cited section to state the specific criteria that will be used to determine whether the noted intrusive investigation will be initiated, or reference where this information may be found elsewhere in the document or its appendices.

11. **Section 2.3.5.1, Excavation of Digitally Reacquired Anomalies, Page 2-9:** The last sentence in this section states, "If MEC are encountered that are suspected of containing unknown filler, MEC extinction will be conducted in accordance with the SOP for MEC with Unknown Filler presented in Appendix D of this G1SAP." Please explain the reason for the use of the word "extinction" in this sentence and what it entails.

12. **Section 5.25, Geophysical QC Surveys, Page 5-19:** In the three sub-elements (QC-1, QC-2, and QC-3) of the first paragraph of the section, the basic concepts of these three QC steps are identified. However, no specific resurvey percentage (or reference as to where this may be found elsewhere in the document or its appendices) is provided for QC-2 and QC-3. Please provide the percentages to be resurveyed, a discussion of how they will be determined, or a reference as to where these may be found elsewhere in the Dft GP 1 RI/FS WP, Seaside & Parker Flats MRAs, Phase II, or its appendices.

13. **Appendix B, Parker Flats MRA Phase II – Types of MEC Removed and Hazard Classification, Page B-2:** The table lists an item as follows: "High explosive, 40mm (model unknown)." It is unclear as to whether this is a cartridge or a projectile. Please revise the entry to provide this information, if available.

DEPARTMENT OF THE ARMY
FORT ORD OFFICE, ARMY BASE REALIGNMENT AND CLOSURE
P.O. BOX 5008, BUILDING #4463 GIGLING ROAD
MONTEREY, CALIFORNIA 93944-5008

REPLY TO
ATTENTION OF

JUN 30 2008

Base Realignment and Closure

Stan Cook
ESCA Remediation Program Manager
Fort Ord Reuse Authority
100 12th Street
Marina, CA 93933

Subject: *Draft Group 1 Remedial Investigation/Feasibility Study (RI/FS) Work Plan, Volume 1-Work Plan* and *Volume 2-Sampling and Analysis Plan*, dated May 23, 2008, received on May 29, 2008.

Dear Mr. Cook:

Thank you for an opportunity to review and comment on the subject document. The Army's comments are enclosed. Please note our comments are focused on "big picture" issues such as the consistency with documents previously produced under the Army's cleanup program. A copy of this letter will be furnished to U.S. Environmental Protection Agency (Judy Huang) and California Department of Toxic Substances Control (Roman Racca).

Sincerely,

Gail Youngblood
BRAC Environmental Coordinator
Fort Ord Field Office

Enclosure

DRAFT Group 1 Remedial Investigation/Feasibility Study (RI/FS) Work Plan, Seaside Munitions Response Area (MRA) and Parker Flats MRA Phase II, Volume 1

Army Comments:

1. P.1-3, Section 1.3.1, last paragraph. The last sentence should be revised to clarify that the consultations resulted in biological opinions (BOs) that allow impacts to and incidental take of listed species during MEC remedial activities but require mitigation measures to be implemented during the munitions response activities to reduce and minimize impacts to the protected species and their habitats.

2. p.2-5, Section 2.3.2 Future Land Use. In addition to the 1997 Fort Ord Base Reuse Plan, the 2002 *Assessment East Garrison – Parker Flats Land Use Modifications* is applicable and should be introduced in this section.

3. p.3-1, Section 3.2 Parker Flats MRA Phase II Evaluation. There is a 1.1-acre portion of MRS-13B that overlaps parcel E19a.2. This area was called "MRS-13B Habitat Reserve" in the Final Track 2 Munitions Response RI/FS for the Parker Flats MRA (Phase I). No MEC item was recovered from the MRS-13B Habitat Reserve during the subsurface MEC removal that was previously conducted. Remedial investigation and risk assessment for this area are complete and documented in the final Track 2 RI/FS report. However, as described in the feasibility study (FS), Section 2.1.1 Assessment of Reuse Areas for FS Analysis, this area was not included in the FS (therefore the subsequent Proposed Plan) due to its small size. A decision was made that an evaluation of remedial alternatives (if response is required) for the MRS-13B Habitat Reserve should be conducted when the rest of the habitat reserve property (E19a.2) is evaluated in an RI/FS and ROD. Please reflect this information and include the MRS-13B Habitat Reserve Reuse Area in the Group 1 FS.

4. p.4-5, Section 4.4 RQA Pilot Study. Please state whether this pilot study is intended to satisfy the requirement of the ESCA for a RQA pilot study.

5. p.4-6, Section 4.5.2 Parker Flats MRA Phase II. To reduce potential confusion, please clarify that "non-residential" means non-residential development, and does not include habitat reserve. Please also consider "habitat reserve" as a land use category name since "habitat reserve" was used in Volume 2, Section 2.1 and Figure A-1.

6. p.4-7, Section 4.5.2 Parker Flats MRA Phase II, last paragraph. This section describes that the surface sweep will involve investigation of shallow anomalies within 3 inches. Please describe if deeper anomalies that are not completely investigated will be documented. Same comment applies to Volume 2, p.2-2, Section 2.2.1.

7. p.4-11, Section 4.10 Community Relations. First paragraph. The Community Involvement and Outreach Program (CIOP) Plan does not amend the Fort Ord Community Relations Plan; however, it is an enhancement to this existing plan. Please revise the sentence as follows: "The CIOP Plan is an addendum to the Army's former Fort Ord Community Relations Plan." Please also see the Army's comments to similar text that appeared in Draft CIOP Plan.

8. p.4-12, Section 4.10.3.

a. Bullet 1. It is indicated "all CSUMB faculty, staff, and students residing in campus housing will receive a copy of the newsletter while school is in session." should be re-evaluated. Suggestion to instead describe the actions that FORA and/or the ESCA RP Team will take to reach out to the CSUMB.
b. Bullet 1. It is indicated that the FORA newsletters will be posted on the Army's Fort Ord cleanup website. It would be more accurate to state that FORA newsletters that are posted on FORA's website are available by hyperlink to FORA's website from www.fortordcleanup.com/community/factsheets.asp.
c. Bullet 5. It is indicated that FORA factsheets will be included into the Information Repositories. Information Repositories are maintained by the Army and typically does not include factsheets. Please revise the text to the effect.
d. Bullet 8. The text as written can be mis-interpreted as suggesting that FORA and/or the ESCA RP Team is maintaining the Fort Ord Administrative Record and the Information Repositories. Please revise the text to the effect that FORA and/or the ESCA RP Team will submit RI-related documents to the Army for inclusion in the Administrative Record.

9. p.5-1. Section 5.2 Task 2 Community Relations. The last two sentences indicate that the Army's previous versions of Community Relations Plans (CRPs) have been superseded by the current CIOP Plan and the CRP Update Number 3. To clarify, please revise the text to read "The MEC-related community relations programs implemented at the former Fort Ord have been described in the CRP (Army 1998), the CRP Update Number 1 (Army 2000), the CRP Update Number 2 (Army 2001) and the CRP Update Number 3 (Army, 2006). The CIOP Plan is an addendum to the Army's former Fort Ord CRP."

10. p.5-2, Section 5.5 Task 5 Data Evaluation. This section indicates that the results of this task will be presented to stakeholders prior to proceeding to the risk assessment. Please describe how this coordination will be accomplished.

11. p.5-2, Section 5.6 Task 6 Risk Assessment. This section indicates that the results of this task will be presented to stakeholders prior to proceeding to the development of alternatives. Please describe how this coordination will be accomplished.

12. Table 1 Potential Applicable or Relevant and Appropriate Requirements (ARARs). Please review the "remarks" column so that they address the planned/anticipated CERCLA actions for the Group 1 MRAs.

13. Please include an acknowledgement of sponsorship pursuant to ESCA Section D.11.

14. Please coordinate any outreach activities targeting the Department of Defense (DoD) communities that may be affected by the planned field investigation (Fitch and Marshall housing areas, DoD Center) and associated possible road closures with the BRAC Fort Ord Field Office. Our Point of Contact for this matter is Melissa Broadston at 831-393-1284.

Detail/minor comments:

15. p.1-1, Section 1.0. First paragraph. Please replace the phrase "ordnance and explosives" with the more recent term "military munitions."

16. p.1-2, Section 1.3.1. Please see the Army's comments to similar text that appeared in Draft Summary of Existing Data Report (SEDR), Section 2.2.

Army Comments:

17. p.2-2, Section 2.2.1 Parker Flats MRA Phase II Remedial Investigation. This section discusses that the investigation of residential and non-residential development areas will entail 100% digital geophysical investigation to the depth of detection. While the plan for structure removal was clarified in Appendix C: Building Demolition and Removal Plan, it is not clear how paved areas such as roads will be handled during the investigation. Please provide additional text to clarify.

18. p.2-8, Section 2.3.5.1 Excavation of Digitally Reacquired Anomalies. Fourth paragraph discusses inspecting discovered MEC items to confirm that it is MEC, MD or other scrap, and that MD and scrap will be transported offsite for disposal or recycling. Please also discuss whether MD will be inspected and certified free of explosives hazard before it is shipped offsite.

19. p.5-21, Section 5.25 Geophysical QC Surveys, QC-2 Geophysical Resurveying. The second paragraph discusses failure criteria of a discovery of an MEC or MEC-like item, or five re-acquirable anomalies. Please clarify whether this QC criteria is applied to each 100' x 100' grid, or to the entire footprint of geophysical investigation.

20. Section 7.0 Location Surveys and Mapping Plan. It is our understanding that the ESCA RP Team is in the process of developing a procedure for migrating the munitions response data into the Army's MMRP database, and that you have been coordinating this effort with our MMRP database manager. Please include this procedure into the final version of the Group 1 RI/FS Work Plan to ensure that necessary data is collected throughout the project and available for submission at the end of the project.

21. Please include a procedure for handling a situation in which possible Army obligations, as defined in the ESCA, are discovered during the remedial investigation.

22. p.12-5, Section 12.3.2.3.
    a. Paragraph #2. The statement that excavated areas will be allowed to revegetate naturally applies to typical mag and dig operations. However, if excavations are larger and disturb more than approximately 200 square feet, then passive or active restoration with follow-up monitoring may be necessary. This will be evaluated on a case-by-case basis.
    b. Last paragraph. The paragraph states that restoration monitoring will occur in accordance with Chapter 4 of the HMP. However, the requirement to monitor vegetation in Habitat Reserve areas is described in Chapter 3 of the HMP.

23. Appendix D: Standard Operating Procedures. Standard Operating Procedure for MEC with Unknown Filler. Section 5.1 General. Bullet 7 indicates that the standard reporting procedure is for FORA to contact the Presidio of Monterey Police Department (POMPD) who will notify the Technical Escort Unit (TEU). After the property is transferred to FORA, the standard procedure for such notification should be from FORA to local law enforcement agency to the EOD unit assigned to the region. If the EOD unit determines that a response by TEU is needed, it would complete such notification. In addition, FORA should notify the POMPD and the BRAC Fort Ord Field Office when it notifies the local law enforcement agency.

24. Appendix F: Residential Quality Assurance Pilot Study Work Plan. Section F-2.1 RQA Pilot Study Test Areas. It is our understanding that the test area RQA-2 contains a portion that may not be developed for residential use (a portion of Parcel E18.1.1, a part of the veterans cemetery project). Please re-assess the suitability of this site for RQA pilot study implementation given the uncertainty in the future use.

25. Appendix F: Residential Quality Assurance Pilot Study Work Plan. The Army will provide additional review comments on the Residential Quality Assurance Pilot Study Work Plan after regulatory agencies provide their inputs.

Detail/minor comments:

26. Table 5-1, Recovery and Penetration Depths of MEC Previously Encountered in Parker Flats MRA Phase II. One of the footnotes describes MRA as "Munitions Response Site." Please correct this to "Munitions Response Area."

27. Appendix B: MEC Data. The Hazard Classification table describes hazard classification 0 as "Inert MEC that will cause no injury." By definition MEC is explosive in nature, therefore category 0 or "inert" classification is not possible for a MEC item. Classification 0 should be described as "inert munitions item that will cause no injury" instead.

28. Appendix F: Residential Quality Assurance Pilot Study Work Plan. Figure F-2. The legend describes hazard classification 0 as "Inert MEC that will cause no injury." By definition MEC is explosive in nature, therefore "inert" classification is not possible for a MEC item. Classification 0 should be described as "inert munitions item that will cause no injury" instead.

29. Appendix I: Explosives Siting Plan. Section 1.6.1 Detonation Site Blow-In Place. The second to the last bullet discusses that after property transfer, fire risk assessment for planned detonations will be conducted by the City of Seaside Fire Department. Please verify if this is the case since the majority of the investigation area is within the jurisdiction of the Monterey County.

30. Appendix J: Site Safety and Health Plan. Section J-12.4 Offsite Emergency Response Services. Table J-6 Emergency Contacts lists City of Seaside police and fire agencies. Please verify whether Monterey County law enforcement and fire agencies need to be identified, since the majority of the investigation area is within the jurisdiction of the Monterey County.

SC
LB

Marina Equestrian Association
P.O. Box 1320
Marina CA 93933

Marina Equestrian Association

24 September 2008

FORA
Attn: Mr. Stan Cook
100 12th Street
Building 2880
Marina, CA 93933

Ref: Requests relating to Remediation Program for Parker Flats MRA (Group 1)

Dear Mr. Cook

The Marina Equestrian Association (MEA), which operates the Marina Equestrian Center (MEC), would like to address aspects of the FORA / ESCA Remediation Program contained in the Draft of "Group 1, Remedial Investigation / Feasibility Study Work Plan" relating to The Parker Flats Munitions Response Area. Certain aspects of this plan impact the operation of our organization, the facility we run and visitor-users of our site.

We fully support remediation of these areas. However, as a public access equestrian facility, the MEC needs to be supported in having safe access to the BLM during this time of fieldwork and in gaining access to the Parker Flats area as soon as possible to continue our recreational and public access use of those areas.

Our specific comments for FORA's consideration are:

a. We ask that FORA consider opening the Parker Flats MRA as soon as field work is completed and dangers have been removed. Opening the site while paperwork is completed would reduce the time and burden of lost access and continue our present public uses more quickly.
b. Equestrian use should be added to paragraph 2.3.1 as a daily recreational user.
c. Equestrian use should be included, in paragraphs 2.3.1 and 2.3.2. for past, current and future land use
d. We wish to provide testimony that current recreational uses of the Parker Flats MRA are not conflicting and all should be accommodated after remediation. These daily recreational users are hikers, joggers, bikers, dog walkers and horse riders.
e. We ask to have the Marina Equestrian Center acknowledged, where appropriate, as an historic and future source of users to this area due to its close proximity to Parker Flats and its unique connection to the National Park Service.

3

Background and the specific impact of this closure on our operations are detailed in the following pages. Our suggestions are also detailed there. Lynne Gose, at 831-883-8644 or jrgose@comcast.net, is our point of contact on this issue.

We appreciate the care with which the public is kept informed of FORA and ESCA activities in the former Fort Ord lands and the opportunity to provide input in these important processes.

Sincerely,

The 2008 MEA Board of Directors

1. Introduction

The Marina Equestrian Association (MEA) would like to address aspects of the FORA ESCA Remediation Program contained in the Draft of "Group 1, Remedial Investigation / Feasibility Study Work Plan" relating to Parker Flats Munitions Response Area. Certain aspects of this plan impact the operation of our organization, the facility we run and visitor/users of our facility.

2. Background and History

The Marina Equestrian Association operates the 15 acre Marina Equestrian Center (MEC) at the corner of 5th Street and 9th Avenue in Marina. Equestrian activities have operated in this portion of Fort Ord since about 1905 when the first US Army cavalry units occupied this site and used what is now FORA and BLM land for maneuvers. The renowned 11th Cavalry "Blackhorse" unit was the last military unit to occupy the site before the cavalry was disbanded in 1965. Many of the trails we ride today are those created and traveled by cavalry troupers throughout the last century.

In 1965 the military stables was given a recreational use. Military and civil service employees assigned to Military stations on the Monterey Peninsula created a cooperative organization to run the site as a riding club for military family recreation. Trail use continued with this organization. With the closure of Fort Ord in the 1990s, the survival of the facility was in doubt.

Faced with the loss of their Army sponsor for the land, and the potential loss of the facility for use by military families assigned to the Monterey peninsula, the Marina Equestrian Association (MEA) was founded as a non profit organization to explore the possibility of preserving the facility for public use. MEA approached the City of Marina in April of 1994 to sponsor their application to continue the equestrian activity on the (then) 34 acre property.

At the urging of citizens of the community, The City of Marina requested, under the Federal Lands to Parks Program and FORA, to keep the stables open to provide public recreation and take advantage of the extensive trail systems. The land was transferred to The City of Marina as an Equestrian Center with oversight by the National Parks Service. MEA operated the facility and provided boarding of horses and other programs to citizens of Marina and the Monterey Peninsula.

MEA has operated a successful stable for horse-owning members of the community willing to provide their own labor and skills to offset the normal payroll and commercial costs of operating a stable. This creates a unique recreational opportunity for working-class families to experience horse ownership and make use of easy access to the extensive Fort Ord and BLM Trails.

Over time, MEA provided a variety of public access programs in the community. Most recently, MEA has offered riding lessons, quarterly Kids Days, a community open house, BLM orientation rides for area trailriders, the Marina School Break Riding Camp Programs. Always, the center is available for visits, as a picnic site, for arena rental, for travelers visiting the area with horses (a hotel for horses), riding lessons, or for safe access to BLM trails for area horse owners. CSUMB students also volunteer for public service, ride, or board horses at the MEC.

The Center is active as an emergency evacuation site for livestock and members are registered with local rescue missions to assist with transportation of horses from endangered locations during fire season or other disasters. During the 2008 fire season, the Center hosted eight horses evacuated from Big Sur fire, at no cost to their owners. Members also participate in the Monterey Bay Bicycle and Equestrian Assistance Team (BETA) to provide visitor assistance, emergency response and patrol on the trails of the BLM and MEA participates monthly in the FORA User's Working Group. Other MEC riders provide a service to the governing jurisdictions of FORA and BLM public lands by reporting dangers, illegal use and trail assistance while riding these areas.

3. Location of the Equestrian Center

The center is located less than one mile from the Northwest corner of the CSUMB Off-Campus and County North areas (see map at Figure 1). By our system of trails we are about 3 miles from the access point to the BLM, where it is bordered by Watkins Gate Road or 2 miles from the Gigling Road access at 8th Street and Gigling Road. Our members, visitors and users, if not riding through the CSUMB Off-Campus area, often park at the 8th and Gigling Road parking area access the Parker Flats area.

4. Land Use by MEA (ref paras 2.3.1 and 2.3.2)

Our organization and its membership is the latest in a long line of equestrian, hiker and dog-walking users of the Parker Flats MRA. Before our current day, users were the many military families and the cavalry troupers who used this extensive network of trails. Although members occasionally hike, bike and dog-walk the area, our primary concern for this request is the use of these trails by horseback. These undeveloped areas have soft footing and perfect trails for horses and their use has been passed down among riders for decades. Our members and guests use these areas DAILY for equestrian recreation and to gain access to the adjacent and more extensive BLM lands.

MEA provides public access and a safe trailhead for equestrian users of the Western portion of the Fort Ord BLM. Over the decades, area and regional riders bought their horses to our facility which provided a safe and secure environment to unload horses and a location which could provide restroom facilities and running water for watering and bathing horses after a long ride. Most riders explore the BLM, CSUMB Off-Campus and North County, and Parker Flats trail areas with rides of 2-6 hour durations.

5. General Comments

In MEA's experience, all current users (bike riders, dog walkers, hikers and equestrians) get along well, are courteous and safety minded when on the trail. In our view, these are all compatible activities. All groups are mutually supportive of use of trails by other user groups and support sharing this recreational resource.

MEA fully supports munitions cleanup and has worked to educate our membership and visiting riders of the importance of this remediation. We have worked diligently with the FORA user's Group to stay abreast of the remediation plans and requirements and to educate other users with whom we have contact. This summer we hosted two equestrian trailride events informing area riders of the impending CSUMB Off-Campus, North County and Parker Flats trail closures, and oriented them with the authorized access corridors to the BLM. We also provide modified maps to the trail riding public showing the new access corridors and optional parking areas.

However, as a public access facility, the MEC needs to be supported in having SAFE access to the BLM during this time of fieldwork and in gaining access to the Parker Flats area as soon as possible to continue our recreational and public access use of those areas.

6. Impact of closures on MEC's public access use and outreach

Closure for longer than apbsolutely necessary to make the area safe sevearly limits our ability to perform our BLM access and public equestrian recreation missions. For the past year, MEA has been negotiating with a concessionaire to provide trail rides onto public lands to members of the public who do not own their own horses. This was a use of our facility and equestrian trails were envisioned and mapped out in early FORA planning. Delays of longer than absolutely necessary after fieldwork and remediation are complete will significantly impact the economics of public trail rides and the viability of this and other public access programs.

Closure to public use of this highly desirable Parker Flats area is a frustration to regular users and severely undercuts the access to public recreation our organization provides. Delays not required by safety could even threaten the very existence of the Marina Equestrian Center if public use declines while trails are closed or as equestrian access route become viewed as abandoned. In these times when land has become so valuable, there is enormous pressure on the MEC continue public access activities or face the possibility the City of Marina can justify other uses for the equestrian site.

7. Suggested alternatives to elevate this public access problem

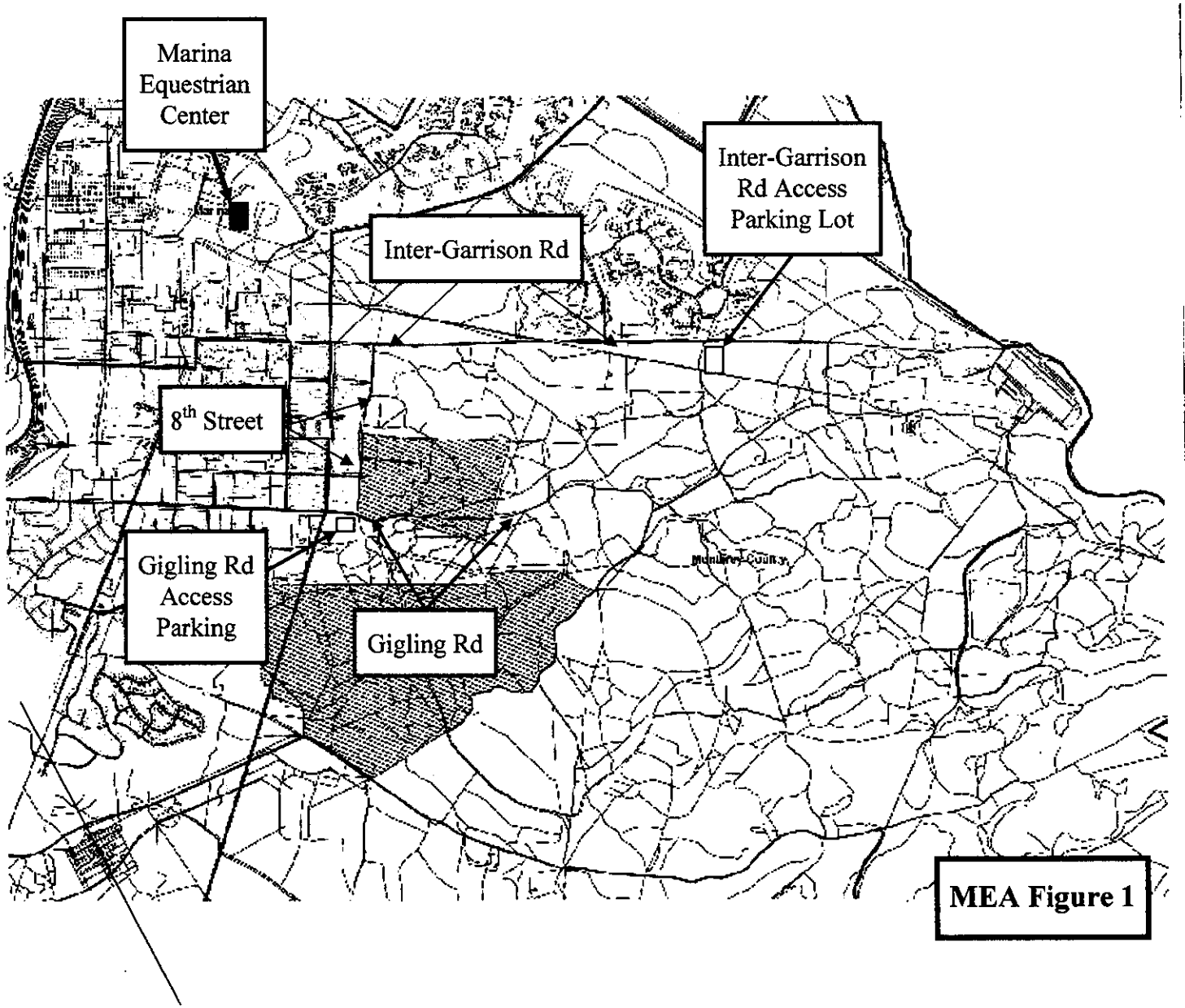
For these reasons we ask that the Parker Flats MRA be opened as soon as field work has been completed and the dangers have been removed. Delays to process paperwork could threaten critical public access programs and there-by the very existence of the Equestrian Center. We have been told that paperwork for site closure can take one-and-a-half to two years to complete once field work has been completed. These extra years with no access are an unnecessary burden in the users of these areas, particularly when there has been a long history of uneventful use. It would be a particularly galling burden to be excluded from using these areas while paperwork is processed after they have been made safe.

By opening the Parker Flats area following field work and munitions removal, there will be an area for public trailriding convenient to the Gigling Road parking lot available while the CSUMB Off-Campus and North County areas are still undergoing field work. Accessing the BLM in a safer and

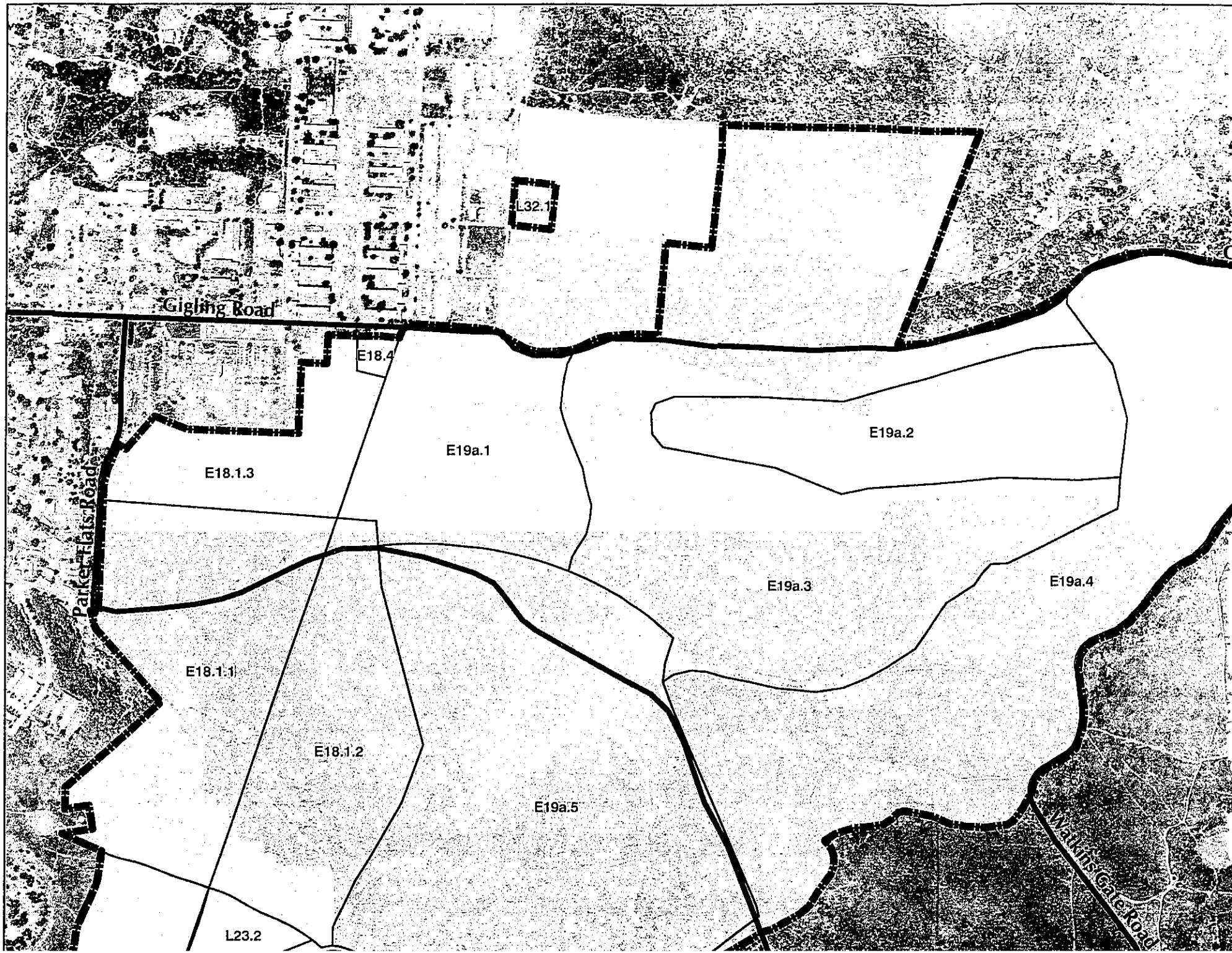
more aesthetically pleasing way for those using Gigling Road trailer parking access would be available months or years earlier. Riding through the Parker Flats area to reach the BLM would avoid a long walk on Gigling Road pavement to reach the BLM entrance. Equestrian users of the MEC and public trail riders will also be able to enjoy closer and more varied recreational alternatives much sooner.

8. In summary, our specific comments for FORA's consideration are:

a. We ask that FORA consider opening the Parker Flats MRA as soon as field work is completed and dangers have been removed. Opening the site while paperwork is completed would reduce the time and burden of lost access and continue our present public access and equestrian recreation missions more quickly. It would benefit other users as well.
b. Equestrian use should be added to paragraph 2.3.1 as a daily recreational user.
c. Equestrian use should be included, in paragraphs 2.3.1 and 2.3.2. for past, current and future land use
d. We wish to provide testimony that current recreational uses of the Parker Flats MRA are not conflicting and all should be accommodated after remediation. These daily recreational users are hikers, joggers, bikers, dog walkers and horse riders.
e. We ask to have the Marina Equestrian Center be acknowledged, where appropriate, as an historic and future source of users to this area due to its close proximity to Parker Flats and its unique connection to the National Park Service.


Marina Equestrian Center
Inter-Garrison Rd Access Parking Lot
Inter-Garrison Rd
8th Street
Gigling Rd Access Parking
Gigling Rd

MEA Figure 1



Vol 1 Parker Flats MRA Phase I and Phase II Areas.mxd - 5/21/2008 ש ב 43:13 PM

APPENDIX F

Distribution List

Print	CD	Name	Organization	Address	City and State	Zip
1	1	Stan Cook	Fort Ord Reuse Authority	100 12th Street, Bldg. 2880	Marina, CA	93933
1	1	Michael Houlemard	Fort Ord Reuse Authority	100 12th Street, Bldg. 2880	Marina, CA	93933
1	1	Judy Huang	U.S. Environmental Protection Agency	75 Hawthorne Street, Mail SFD-8-3	San Francisco, CA	94105
1	1	Tom Hall	TechLaw, Inc.	7 Shore Point Road	North Little Rock, AR	72116
1	1	Roman Racca	California Department of Toxic Substances Control	8800 California Center Drive	Sacramento, CA	95826
1	1	James Austreng	California Department of Toxic Substances Control	8800 California Center Drive	Sacramento, CA	95826
2	2	Gail Youngblood	Department of the Army	BRAC, Bldg. #4463 Gigling Road	Monterey, CA	93940
1	1	Sandy Reese	MACTEC	Administrative Record BRAC, Bldg. #4463 Gigling Road	Monterey, CA	93940
1	1	Peter deFur	TAG Consultant	1108 Westbriar Drive; Suite F	Richmond, VA	23238
1	1	LeVonne Stone	Executive Director, Environmental Justice Network	P.O. Box 361	Marina, CA	93933
1	1	Mike Weaver	Fort Ord Community Advisory Group	52 Corral de Tierra Road	Salinas, CA	93908
1	1	Richard Bailey	Fort Ord Community Advisory Group	440 Ramona Avenue, Apt 16	Monterey, CA	93940
1	1	Linda Millerick	Save Our Air Resources (SOAR)	751 Montery - Salinas Highway	Salinas, CA	93908
1	1	Nick Nichols	Monterey County, Resources Management Agency Office of Housing & Redevelopment	168 West Alisal Street, Third Floor	Salinas, CA	93901
1	1	Project File	LFR Inc. Attention: Jennifer Johnson	1900 Powell Street, 12th Floor	Emeryville, CA	94608
1	1	Project Library	LFR / Weston Project Office	100 12th Street, Bldg. 2903	Marina, CA	93933

Approved:

Kristie Reimer
ESCA Remediation Program Manager
LFR Inc.