FINAL

Record of Decision

Group 1

Seaside and Parker Flats (Phase II) Munitions Response Areas

Former Fort Ord, California

September 19, 2018

United States Department of the Army
Base Realignment and Closure (BRAC)
Former Fort Ord, California

CONTENTS

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1. DECLARATION

1.1. Site Name and Location

The former Fort Ord is located in northwestern Monterey County, California, approximately 80 miles south of San Francisco (Figure 1). The U.S. Environmental Protection Agency (EPA) identification number for Fort Ord is CA7210020676. This Record of Decision (ROD) addresses Department of Defense's (DoD's) military munitions (also defined as "military munitions"). These include military munitions that may be determined by qualified personnel (e.g., UXO-qualified personnel) to pose an explosive hazard (i.e., be Munitions and Explosives of Concern [MEC], specifically unexploded ordnance [UXO] and discarded military munitions [DMM]) (herein after referred to as MEC) that potentially remain in the Group 1 Munitions Response Areas (MRAs). (Note: for the Fort Ord Military Munitions Response Program being conducted and this ROD, MEC does not include small arms ammunition.)

Since 1917, the Army used portions of the former Fort Ord for maneuvers, live-fire training, and other munitions-related purposes. Because the DoD conducted munitions-related activities (e.g., live-fire training, demilitarization) on the facility, MEC may remain present on parts of the former Fort Ord. The types of military munitions used at the former Fort Ord included: artillery and mortar projectiles, rockets, guided missiles, rifle and hand grenades, practice land mines, pyrotechnics, bombs, and demolition materials. A Glossary of Military Munitions Response Program Terms is provided in Appendix A.

In March 2007, the United States Department of the Army (Army) and Fort Ord Reuse Authority (FORA) entered into an Environmental Services Cooperative Agreement (ESCA) for the Army to provide FORA funding to complete munitions response actions required for remedy implementation. In accordance with the ESCA and an Administrative Order on Consent (AOC), FORA is responsible for completion of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) response actions on approximately 3,300 acres of the former Fort Ord with funding provided by the Army, except for those responsibilities retained by the Army. The AOC was entered into voluntarily by FORA, EPA, California Environmental Protection Agency Department of Toxic Substances Control (DTSC), and the United States Department of Justice Environment and Natural Resources Division in December 2006 (EPA Region 9 CERCLA Docket No. R9-2007-03). The underlying property was transferred to FORA in May 2009. The Group 1 MRAs are included in the ESCA between the Army and FORA.

Group 1 includes the Seaside MRA and Parker Flats MRA Phase II (Figures 1, 2, and 3). This ROD does not include the portion of the ESCA Parker Flats MRA that was included in the *Final Record of Decision, Parker Flats Munitions Response Area, Track 2 Munitions Response Site, Former Fort Ord, California* ("the Track 2 Parker Flats ROD," Army 2008). The portion of the ESCA Parker Flats MRA included in the Track 2 Parker Flats ROD is indicated in Figure 1 as the "Parker Flats MRA Phase I". Implementation of the Land Use Control (LUC) remedy is complete, and FORA has been providing for operation and maintenance of the Track 2 remedy since 2009.

A 1.1-acre portion of MRS-13B, identified as the MRS-13B Habitat Reserve area (Figure 4), was evaluated in the remedial investigation and risk assessment for the Track 2 Parker Flats MRA (Army 2006). The area was not included in the resulting Track 2 Parker Flats ROD (Army 2008) due to its small size. It was intended to be included in a different decision document that would address the entire parcel. This area is incorporated into this ROD as part of Parcel E19a.2.

The Group 1 MRAs include sites where MEC were encountered and at which the Army completed munitions responses (munitions removal). The Group 1 MRAs contain all or portions of several munitions response sites (MRSs) that were suspected to have been used for military training with military

munitions (Table 1). These MRSs were investigated, with detected military munition removed. These munitions response actions included Quality Control (QC) and Quality Assurance (QA) requirements that evaluated the adequacy of the munitions response actions. Although munitions response actions were conducted, it is possible that detection technologies may not have detected every military munition present. Because a future land user (e.g., resident, recreational user, habitat monitor, maintenance worker, or construction worker) may encounter military munitions at the Group 1 MRAs, a Group 1 Remedial Investigation/Feasibility Study (RI/FS) was conducted to evaluate remedial alternatives to address this potential risk to future land users (ESCA RP Team 2017c). The Group 1 RI/FS was developed by FORA under the ESCA and in accordance with the AOC.

1.2. Basis and Purpose

This decision document selects the remedial action for military munitions for the Group 1 MRAs. The remedy for each MRA was selected in accordance with CERCLA of 1980, as amended, and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on information and reports contained in the Administrative Record for the former Fort Ord.

This decision is undertaken pursuant to the President's 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. The selection of the remedy is authorized pursuant to CERCLA Section 104, and the selected remedy will be carried out in accordance with CERCLA Section 121.

This ROD addresses MEC that potentially remain in the Group 1 MRAs. The Army and EPA have jointly selected the remedy. The DTSC reviewed the ROD and its concerns were addressed.

1.3. Site Assessment

This ROD addresses hazardous substances and pollutants or contaminants which may pose a threat to human health and welfare or the environment.

The Army has provided the CERCLA covenant in the deed for the property. Some MEC encountered and detonated on the property in the past were a Resource Conservation and Recovery Act (RCRA) reactive waste and thus a CERCLA hazardous substance. Therefore, MEC discovered on the property in the future will likewise be addressed as such pursuant to the CERCLA covenant unless the Army determines that an item is not a hazardous substance by making a waste specific determination based on testing or knowledge consistent with RCRA.

1.4. Description of the Selected Remedy

The selected remedy addresses risks to human health and the environment from MEC that potentially remain in the Group 1 MRAs. Munitions responses have been completed by the Army and FORA at the Group 1 MRAs, thereby, significantly reducing the risks to human health and the environment from military munitions. The selected remedy for the Group 1 MRAs includes LUCs because detection technologies may not have detected every military munition present. The LUCs include requirements for: (1) military munitions recognition and safety training for workers who will conduct ground-disturbing or intrusive activities; (2) construction support to manage the risk associated with the potential presence of military munitions for ground-disturbing or intrusive activities to address MEC that potentially remain in the subsurface; (3) access management measures in areas designated for habitat reserve; (4) restrictions prohibiting residential use in areas designated for non-residential development reuse or for habitat reserve; and (5) restrictions against inconsistent uses (applicable to the habitat reserve areas).

For the purpose of this decision document, residential use includes: single family or multi-family residences; childcare facilities; playgrounds; hospitals; nursing homes or assisted living facilities; and any type of educational facility for children or young adults in grades kindergarten through 12. Any proposal for residential use, as defined in this ROD, in the designated non-residential development reuse or habitat reserve portions of the Group 1 MRAs will be subject to regulatory agency and Army review and approval. The selected remedy will be implemented by FORA in its capacity as Grantee under the ESCA and as a party to the AOC and not in its capacity as the owner of the real estate or as a government entity.

A Remedial Design/Remedial Action (RD/RA) Work Plan and/or Land Use Controls Implementation Plan and Operation and Maintenance Plan (LUCIP/OMP) will be developed to: (1) outline the processes for implementing the LUCs selected as part of the remedy; and (2) identify procedures for responding to discoveries of MEC. The RD/RA Work Plan and/or LUCIP/OMP will describe the roles and responsibilities of the federal and state agencies during implementation of the selected remedy. This plan will be submitted within 90 days of the signature of this ROD. The Army will evaluate the Group 1 MRAs as part of the installation-wide CERCLA five-year review. The selected LUCs may be modified in the future based on the five-year review process and other activities. The next five-year review will occur in 2022.

As part of the LUC implementation strategy, long-term management measures comprised of a deed notice and restrictions, annual monitoring and reporting, and five-year review reporting will be included for the land use areas within the Group 1 MRAs. As part of the early transfer of the subject property, the Army has entered into State Covenants to Restrict Use of Property (CRUPs) with the DTSC that document land use restrictions. The existing deeds to FORA for the Group 1 MRA parcels include the following land use restrictions: (1) residential use restriction; and (2) excavation restrictions (unless construction support and military munitions recognition and safety training are provided). The Army will modify the existing land use restrictions in the federal deeds, as necessary, to reflect the selected remedy. FORA, or its successor under the ESCA and the AOC, will prepare and submit annual LUC status reports to the EPA and the DTSC which will include compiled annual LUC monitoring reports and will summarize the military munitions encountered that were determined to be MEC, and changes in site conditions that could increase the possibility of encountering military munitions. Copies of the annual LUC status reports will also be provided to the Army for inclusion in the five-year reviews.

While the Army does not consider California laws and regulations concerning CRUPs to be potential applicable or relevant and appropriate requirements (ARARs), the Army entered into CRUPs with the DTSC at the time the property was transferred to FORA (Army/DTSC 2009a and 2009b). The DTSC will modify the existing CRUPs, as appropriate, to reflect the land use restrictions included in the selected remedy. Although the DTSC and the EPA Region IX disagree with the Army's determination that California laws and regulations concerning CRUPs are not potential ARARs, they will agree-to-disagree on this issue since the Army executed the CRUPs and the DTSC will modify the CRUPs, as appropriate, to be consistent with the identified remedy.

1.5. Statutory Determination

The selected remedy is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to this remedial action, and is cost effective. Munitions responses to address the principal threat posed by military munitions, which may be determined to pose an explosive hazard including munitions determined to be MEC, are complete. This meets the intent of using permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable, and satisfies the statutory preference for treatment as a principal element (i.e., reducing the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants as a principal element through treatment).

Because the selected remedy may not result in removal of every military munition present within the Group 1 MRAs, a statutory review will be conducted by the Army within five years after initiation of the remedial action to ensure the remedy is, or will be, protective of human health and the environment. The next five-year review will occur in 2022.

1.6. ROD Data Certification Checklist

The following information is included in the Decision Summary section of this ROD. Additional information can be found in the Administrative Record file for this site.

- Types of MEC identified during previous removal actions (Section 2.8.).
- Current and reasonably anticipated future land use assumptions used in the Risk Assessment and ROD (Section 2.9. and Table 2).
- Current after-action "Overall MEC Risk Scores" estimated in the Risk Assessment based upon the current site conditions (Section 2.10.).
- Remedial action objectives for addressing the current after-action "Overall MEC Risk Scores" estimated in the Risk Assessment (Section 2.11.).
- How source materials constituting principal threats are addressed (Sections 2.13. and 2.14.).
- Potential land use that will be available at the site as a result of the selected remedy (Section 2.14. and Table 2).
- Estimated capital, annual operations and maintenance (O&M), and total present worth costs, discount rate, and the number of years over which the remedy cost estimates are projected (Section 2.14.4).
- Key factor(s) that led to selection of the remedy (Sections 2.14.1 and 2.15. and Tables 3 and 4).

1.7. Authorizing Signatures and Support Agency Acceptance of Remedy

Record of Decision
Group 1 Munitions Response Areas
Former Fort Ord, California

Signature Sheet for the foregoing Record of Decision for Group 1, Seaside and Parker Flats (Phase II) Munitions Response Areas, Former Fort Ord, California, among the United States Army, the United States Environmental Protection Agency, and the California Environmental Protection Agency, Department of Toxic Substances Control.

Thomas E. Lederle
Chief
Base Realignment and Closure Division
U.S. Department of the Army

20 Sep 2018
Date

Record of Decision
Group 1 Munitions Response Areas
Former Fort Ord, California

Signature Sheet for the foregoing Record of Decision for Group 1, Seaside and Parker Flats (Phase II) Munitions Response Areas, Former Fort Ord, California, among the United States Army, the United States Environmental Protection Agency, and the California Environmental Protection Agency, Department of Toxic Substances Control.

William K. Collins

William K. Collins
BRAC Environmental Coordinator
Fort Ord BRAC Office
U.S. Department of the Army

9/19/18

Date

Record of Decision
Group 1 Munitions Response Areas
Former Fort Ord, California

Signature Sheet for the foregoing Record of Decision for Group 1, Seaside and Parker Flats (Phase II) Munitions Response Areas, Former Fort Ord, California, among the United States Army, the United States Environmental Protection Agency, and the California Environmental Protection Agency, Department of Toxic Substances Control.

09-21-2018

Angeles Herrera
Assistant Director, Superfund Division
Federal Facilities and Site Cleanup Branch
U.S. Environmental Protection Agency, Region IX

Date

Record of Decision
Group 1 Munitions Response Areas
Former Fort Ord, California

Signature Sheet for the foregoing Record of Decision for Group 1, Seaside and Parker Flats (Phase II) Munitions Response Areas, Former Fort Ord, California, among the United States Army, the United States Environmental Protection Agency, and the California Environmental Protection Agency, Department of Toxic Substances Control.

The State of California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) had an opportunity to review and comment on the Record of Decision (ROD) and our concerns were addressed.

Charlie Ridenour, P.E.
Branch Chief
Cleanup Program - Sacramento Office
California Environmental Protection Agency
Department of Toxic Substances Control

9/25/18
Date

2. DECISION SUMMARY

2.1. Site Description

The former Fort Ord is located near Monterey Bay in northwestern Monterey County, California, approximately 80 miles south of San Francisco (Figure 1). The former Army post consists of approximately 28,000 acres adjacent to Monterey Bay and the cities of Seaside, Sand City, Monterey, and Del Rey Oaks to the south and Marina to the north. State Route 1 passes through the western portion of former Fort Ord, separating the beachfront from the rest of the base. Laguna Seca Recreation Area and Toro Regional Park border former Fort Ord to the south and southeast, respectively, as well as several small communities, such as Toro Park Estates and San Benancio. Additional information about the site:

- EPA Identification Number: CA7210020676;
- Lead Agency: Army;
- Lead Oversight Agency: EPA;
- Support Agency: DTSC;
- Source of Cleanup Monies: Army;
- Site Type: Former Military Installation.

2.2. Site History

Since 1917, the Army used portions of the former Fort Ord for maneuvers, live-fire training, and other munitions-related purposes. From 1947 to 1974, Fort Ord was a basic training center. The 7th Infantry Division was activated at Fort Ord in October 1974, and occupied Fort Ord until base closure in 1994. Fort Ord was selected in 1991 for decommissioning, but troop reallocation was not completed until 1993 and the base was not officially closed until September 1994. The property identified to remain in the Army's possession (approximately 900 acres) was designated as the Presidio of Monterey Annex on October 1, 1994, and subsequently renamed the Ord Military Community (OMC). Although Army personnel still operate parts of the base, no active Army division is stationed at the former Fort Ord. Since the base was selected for closure in 1991, site visits, historical and archival investigations, military munitions sampling, and removal actions have been performed and documented in preparation for transfer and reuse of the former Fort Ord property. The Army will continue to retain the OMC and the U.S. Army Reserve Center located at the former Fort Ord. The remainder of former Fort Ord was identified for transfer to Federal, State, and local government agencies and other organizations and, since base closure in September 1994, has been subjected to the reuse process. Portions of former Fort Ord property have been transferred. A large portion of the Inland Training Ranges was assigned to the U.S. Department of the Interior, Bureau of Land Management. Other areas on the base have been, or will be, transferred through economic development conveyance, public benefit conveyance, negotiated sale, or other means.

DoD conducted munitions-related activities (e.g., live-fire training, demilitarization) involving different types of conventional military munitions (e.g., artillery and mortar projectiles, rockets and guided missiles, rifle and hand grenades, practice land mines, pyrotechnics, bombs, and demolition materials) at Fort Ord. Because of these activities, military munitions including munitions that upon evaluation by qualified personnel (e.g., UXO-qualified personnel) were determined to be MEC, specifically UXO and DMM, have been encountered and are known or suspected to remain present at various sites throughout the former Fort Ord. A Glossary of Military Munitions Response Program Terms is provided in Appendix A.

2.3. Enforcement and Regulatory History

The Army is the responsible party and lead agency for investigating, reporting, making cleanup decisions, and taking cleanup actions at the former Fort Ord under CERCLA. To address the possibility of the public being exposed to explosive hazards, the Army conducted munitions responses (e.g., investigations and removal actions) following Base Realignment and Closure listing and closure of Fort Ord.

In November 1998, the Army agreed to evaluate military munitions at former Fort Ord in an Ordnance and Explosives Remedial Investigation/Feasibility Study (base-wide OE RI/FS) — now termed the base-wide Munitions Response Remedial Investigation/Feasibility Study (base-wide MR RI/FS) — consistent with CERCLA. A Federal Facility Agreement (FFA) was signed in 1990 by the Army, EPA, DTSC (formerly the Department of Health Services), and the California Regional Water Quality Control Board. The FFA established schedules for performing remedial investigations and feasibility studies and requires that remedial actions be completed as expeditiously as possible. In April 2000, an agreement was signed between the Army, EPA, and DTSC to evaluate military munitions and conduct munitions response activities at the former Fort Ord subject to the provisions of the Fort Ord FFA.

The base-wide MR RI/FS program reviews and evaluates past investigative and removal actions, as well as recommends future response actions deemed necessary to protect human health and the environment regarding explosive safety risks posed by MEC that may be present on the basis of designated reuses. These reuses are specified in the Base Reuse Plan (FORA 1997) and its updates. The base-wide MR RI/FS documents are being prepared in accordance with the FFA, as amended. These documents are made available for public review and comment, and placed in the Administrative Record.

The Army will continue to conduct its ongoing and future munitions responses (e.g., investigation and removal actions) at identified MRSs to mitigate the explosive hazards associated with MEC that may remain present to the public. The Army will accomplish this while gathering data about the type of military munitions present and risk posed at each MRSs for use in the base-wide MR RI/FS. The Army is performing its activities pursuant to the President's 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. Regulatory agencies (EPA and DTSC) provide oversight of the munitions response activities pursuant to the FFA.

The Army will continue to conduct its ongoing and future munitions responses at the former Fort Ord as components of the Army's base-wide efforts to promote explosive safety because of Fort Ord's history as a military installation. These efforts include: (1) five-year reviews and reporting; (2) notices and restrictions in deeds and property transfer documentations (e.g., letter of transfer); (3) munitions incident reporting; (4) military munitions recognition and safety training; (5) school education; and (6) community involvement.

In March 2007, the Army and FORA entered into an ESCA for the Army to provide FORA funding to complete munitions response actions required for remedy implementation. In accordance with the ESCA, the AOC, and the FFA Amendment No. 1, FORA is responsible for completion of the CERCLA remedial activities on approximately 3,300 acres of the former Fort Ord with funding provided by the Army, except for those responsibilities retained by the Army. The AOC was entered into voluntarily by FORA, EPA, DTSC, and the United States Department of Justice Environment and Natural Resources Division in December 2006 (EPA Region 9 CERCLA Docket No. R9-2007-03). The underlying property was transferred to FORA in May 2009.

As part of the early transfer of the subject property, the Army has entered into State CRUPs with the DTSC that document land use restrictions. The DTSC has agreed to modify the existing CRUPs to document the land use restrictions included in the identified remedy. After the signature of this ROD, DTSC will modify the existing CRUPs to be consistent with the final remedy. The applicability of and requirements for CRUPs are described in California Code of Regulations Section 67391.1 and California Civil Code Section 1471.

As described in the *Final Summary of Existing Data Report, Former Fort Ord, Monterey County, California* (SEDR; ESCA RP Team 2008b), the ESCA areas were combined into nine MRAs, and they were further consolidated into four groups according to similar pathway-to-closure characteristics. Group 1 consists of the Seaside MRA and Parker Flats MRA. Group 2 consists of the California State University Monterey Bay (CSUMB) Off-Campus and County North MRAs. Group 3 consists of Del Rey Oaks/Monterey, Laguna Seca Parking, and Military Operations in Urban Terrain Site MRAs. Originally, Group 3 included the Interim Action Ranges MRA. The Interim Action Ranges MRA was removed from Group 3 for independent evaluation as agreed upon by FORA, the EPA, DTSC, and the Army. Group 4 consists of the Future East Garrison MRA. The County North MRA was subsequently removed from Group 2 following completion of the *Track 1 Plug-In Approval Memorandum, County North Munitions Response Area, Former Fort Ord, California* (Army 2010). This ROD addresses the Seaside MRA and Parker Flats MRA Phase II. This ROD does not include the portion of the ESCA Parker Flats MRA that was included in the Track 2 Parker Flats ROD (Army 2008).

2.4. Community Participation

The Final Group 1 RI/FS was published on March 29, 2017, and the Group 1 Proposed Plan was made available to the public on September 6, 2017. The Proposed Plan presented the preferred alternative of Land Use Controls (Alternative 2). The Land Use Control alternative is being selected as the final remedy in this ROD. The Proposed Plan also summarized the information in the Group 1 RI/FS and other supporting documents in the Administrative Record. These documents were made available to the public at the Administrative Record and www.fortordcleanup.com. The Administrative Record and Information Repositories are located at:

- Fort Ord Administrative Record, Building 4463, Gigling Road, Room 101, Ord Military Community, California (www.fortordcleanup.com).
- Seaside Branch Library, 550 Harcourt Avenue, Seaside, California.
- California State University Monterey Bay Tanimura & Antle Family Memorial Library, 100 Campus Center, CSUMB Campus, Seaside, California.

The notice of the availability of the Proposed Plan was published in the Monterey County Herald and the Salinas Californian on September 15, 2017. A 30-day public comment period was held from September 15, 2017, to October 16, 2017. In addition, a public meeting was held on September 27, 2017, to present the Proposed Plan to a broader community audience than those that had already been involved at the site. At this meeting, representatives from the Army and the regulatory agencies were present, and the public had the opportunity to submit written and oral comments about the Proposed Plan. Representatives from FORA were also present to answer questions. The meeting also presented information regarding the inclusion of a 1.1-acre area, identified as the MRS-13B Habitat Reserve area, in this ROD. The Army's response to the comments received during this period is included in the Responsiveness Summary, which is part of this ROD (Section 3.0).

2.5. Scope and Role of Response Action

This ROD addresses the planned response action for managing the potential risk to future land users from MEC that potentially remain in the Group 1 MRAs, where munitions response activities have been completed by the Army and FORA, as described in Section 2.7 below and detailed in the Group 1 RI/FS (ESCA RP Team 2017c).

The 1.1-acre MRS-13B Habitat Reserve area was evaluated in the remedial investigation and risk assessment for the Track 2 Parker Flats MRA (Army 2006). The area was not included in the resulting Track 2 Parker Flats ROD (Army 2008) due to its small size. It was intended to be included in a different decision document that would address the entire parcel. This area is incorporated into this ROD as part of Parcel E19a.2.

The planned response action for the Group 1 MRAs will be the final remedy for protection of human health and the environment. Remedial Alternative 2, which was identified as the preferred remedial alternative for the Group 1 MRAs, is summarized as follows:

- **Remedial Alternative 2 - Land Use Controls (LUCs):** military munitions recognition and safety training for workers who will conduct ground-disturbing or intrusive activities; construction support to manage the risk associated with the potential presence of military munitions during ground-disturbing or intrusive activities; access management measures in areas designated for habitat reserve; restrictions prohibiting residential use (as defined in this ROD) in areas designated for non-residential development reuse or for habitat reserve; and restrictions against inconsistent uses (applicable to the habitat reserve areas).

The selected remedy will be implemented by FORA under the ESCA and in accordance with the AOC. An RD/RA Work Plan and/or LUCIP/OMP will be developed to: (1) outline the processes for implementing land use restrictions; and (2) identify procedures for responding to discoveries of military munitions, including coordinating a response to a discovery of a significant amount of MEC in the Group 1 MRAs. The selected LUCs may be modified in the future based on the five-year review process.

In addition, long-term management measures comprised of a deed restriction, annual monitoring and reporting, and five-year review reporting will be implemented for the reuse areas within the Group 1 MRAs.

The potential presence of chemicals of concern in soil is being addressed under the Army Basewide Range Assessment Program (Shaw 2012) and the *Record of Decision Amendment, Site 39 Inland Ranges, Former Fort Ord, California* (Army 2009). As presented in the *Final Remedial Action Completion Report, Site 39 Inland Ranges Habitat Reserve, Former Fort Ord, California*, the Army has completed soil remedial actions at the Site 39 Inland Ranges and results of the remedial actions meet the remedial action objectives (RAOs) established for the Site 39 Inland Ranges for removal of soil contaminated with lead and/or explosives constituents (ITSI Gilbane 2014).

2.6. Site Characteristics

2.6.1. Seaside MRA

The Seaside MRA is located in the southwestern portion of the former Fort Ord (Figure 1). The Seaside MRA encompasses approximately 423 acres and contains MRS-15 SEA 01, MRS-15 SEA 02, MRS-15 SEA 03, and MRS-15 SEA 04, respectively (Figure 2). Not included within the boundaries of the MRSs,

but located within the Seaside MRA, is the former General Jim Moore Boulevard alignment and the narrow area west of the former General Jim Moore Boulevard alignment, totaling approximately 25 acres.

Historical records and the recovery of military munitions, including MEC, and munitions debris (MD) indicate that the Seaside MRA was used for live-fire military training since its initial government purchase in 1917 and its designation of the land as an artillery range. Cavalry, artillery, and infantry units conducted training activities in the MRA, which is located within the boundary of the historical impact area (Figure 1). The four MRSs located within the Seaside MRA contain all or portions of several live-fire firing ranges used for a variety of training purposes from the 1940s through the 1990s. The usage of the ranges included: small arms training in the four MRSs (Ranges 18, 19, 20, 21, 22, 23, 46, and 59); training ranges at which live-fire training was not conducted in MRS-15 SEA 01 (Old Range 22 and Range 23M); mortar and antitank training in MRS-15 SEA 04 (Range 48); and booby trap training in MRS-15 SEA 04 (Range 50).

2.6.2. Parker Flats MRA Phase II

The Parker Flats MRA Phase II is located in the central portion of the former Fort Ord (Figure 1). The Parker Flats MRA Phase II encompasses approximately 475 acres and contains all or portions of the following MRSs: MRS-04A, MRS-04A EXP, MRS-13B, MRS-15 MOCO.2, MRS-27A, MRS-27B, MRS-27C, MRS-44 EDC, and MRS-44 PBC (Figure 3).

Historical records and the recovery of military munitions, including MEC, and MD indicate that the Parker Flats MRA Phase II was used for military training since its initial 1917 government purchase and its designation as an artillery range. Cavalry and artillery units stationed at the Presidio of Monterey, along with infantry units stationed at the Presidio of San Francisco, reportedly conducted training activities near the Parker Flats MRA. A portion of the Parker Flats MRA Phase II (MRS-15 MOCO.2; Figure 3) is located within the historical impact area (Figure 1).

2.7. Group 1 MRAs Remedial Investigation Summary

The Group 1 MRAs contain all or portions of 13 MRSs where the Army and FORA conducted munitions responses (e.g., investigations and removal actions). These MRSs are listed in Table 1 and shown in Figures 2 and 3. The Remedial Investigation for the Group 1 MRAs is based on the evaluation of previous work conducted for the MRAs in accordance with the *Final Group 1 Remedial Investigation/Feasibility Study Work Plan, Former Fort Ord, Monterey County, California* ("Group 1 RI/FS Work Plan"; ESCA RP Team 2008c) and associated addenda.

This section provides background information on the munitions responses completed by the Army and FORA at the Group 1 MRAs and review (site evaluations) conducted for the MRAs. Table 1 summarizes the results of the site-specific munitions responses (e.g., investigations and removal actions), and Section 2.8 presents a summary of the site evaluations for the MRSs in the Group 1 MRAs as presented in the Group 1 RI/FS (Volume 1; ESCA RP Team 2017c).

2.7.1. Seaside MRA

Scope of Removal Actions – Several munitions responses (e.g., investigations and removal actions) were completed in the Seaside MRA. The actions performed by the Army resulted in the removal of military munitions from the subsurface in the Seaside MRA, with the exception of several Special Case Areas (SCAs) located throughout the Seaside MRA. The scope of the Army's removal actions did not include the areas located outside of MRS boundaries, including the hillside located in the narrow area west of the

former alignment of General Jim Moore Boulevard south of Broadway Avenue and areas within the former alignment of General Jim Moore Boulevard and Eucalyptus Road. Removal actions in the SCAs and the hillside west of the former alignment of General Jim Moore Boulevard, located outside of MRS boundaries, were completed by FORA and resulted in the investigation of all subsurface anomalies that potentially were military munitions and the removal of MEC and other munitions encountered.

A Residential Quality Assurance (RQA) Pilot Study and Implementation Study was conducted on the removal actions in the designated future residential reuse area of the Seaside MRA. The RQA Pilot Study and Implementation Study activities included field verification site walks, digital geophysical mapping (DGM) investigations, and soil scrape and post-scrape DGM investigations in portions of the designated future residential reuse areas. The verification and quality assurance action was conducted by FORA on behalf of the Army under the ESCA.

The munitions responses (e.g., investigations and removal actions) conducted within the Seaside MRA were focused on addressing the potential explosive hazards posed by military munitions. Every military munition detected, and determined by UXO-qualified personnel to be MEC, was destroyed on site. A summary of the investigations and removal actions is provided in Section 2.8.

Site Evaluation – The evaluation process was documented by completion of a series of checklists for the Seaside MRA in accordance with the Group 1 RI/FS Work Plan (ESCA RP Team 2008c). Checklists prepared for the MRA are provided as Appendix E of the Group 1 RI/FS (Volume 1; ESCA RP Team 2017c).

The Seaside MRA is located in the southwestern portion of the former Fort Ord (Figure 1). The Seaside MRA encompasses approximately 423 acres and contains all of MRS-15 SEA 01 (183 acres), MRS-15 SEA 02 (86 acres), MRS-15 SEA 03 (50 acres), and MRS-15 SEA 04 (79 acres) (Figure 2). Not included within the boundaries of the MRSs, but located within the Seaside MRA, are the former General Jim Moore Boulevard alignment and the narrow area west of the former General Jim Moore Boulevard alignment (25 acres).

The four MRSs located within the Seaside MRA contain all or portions of several firing ranges used for a variety of training purposes from the 1940s through the 1990s. The usage of the ranges included: small arms training in the four MRSs (Ranges 18, 19, 20, 21, 22, 23, 46, and 59); non-firing target range training in MRS-15 SEA 01 (Old Range 22 and Range 23M); mortar and antitank training in MRS-15 SEA 04 (Range 48); and booby trap training in MRS-15 SEA 04 (Range 50).

The munitions responses (removal actions) performed by the Army resulted in the removal of subsurface MEC and other munitions from the Seaside MRA, with the exception of 35 acres identified by the Army as SCAs and a narrow area outside the western boundaries of MRS-15 SEA 01 and MRS-15 SEA 02 to the west of the General Jim Moore Boulevard alignment. Removal actions in the SCAs were completed by FORA. These actions included soil scraping (ranging from 6 inches to 10 feet below ground surface) and post-scrape DGM surveys with an investigation of subsurface target anomalies that potentially represented military munitions, except in the few areas where anomalies associated with existing infrastructure (e.g., culverts) were left in place, as described in Section 2.8.

FORA also completed a RQA Pilot Study and Implementation Study in the approximately 276.5-acre designated future residential reuse area of the Seaside MRA as documented in the *Final Group 1 Residential Protocol Implementation Technical Report, Seaside Munitions Response Area, Former Fort Ord, Monterey County, California* (ESCA RP Team 2017a) and *Final Group 1 Supplemental Residential*

Protocol Implementation Technical Report, Seaside Munitions Response Area, Former Fort Ord, Monterey County, California (ESCA RP Team 2017d).

The RQA Pilot Study and Implementation Study included a comprehensive review and assessment of data from previous munitions responses (e.g., investigations and removal actions) to identify residual MEC risks or uncertainties. The identified risks and uncertainties were addressed with DGM investigation of subsurface anomalies that potentially represented military munitions and the removal of MEC and other military munitions recovered from approximately 76.8 acres of the designated future residential reuse area. It also included soil scrape and post-scrape DGM investigations and the investigation of subsurface anomalies that were potentially munitions and the removal of MEC and other military munitions from approximately 7.5 acres of the 76.8-acre area. A narrow area west of the former alignment of General Jim Moore Boulevard and outside the boundaries of MRS-15 SEA 01 and MRS-15 SEA 02, was not subjected to a removal action. However, a comprehensive review and assessment of data from previous munitions responses (e.g., investigations and removal actions) was completed for the area and a field verification site walk was performed on two portions of the narrow area west of MRS-15 SEA 01.

The comprehensive data review and assessment and field verification site walk resulted in no evidence of munitions use in the narrow area west of the former alignment of General Jim Moore Boulevard outside the boundaries of MRS-15 SEA 01 and MRS-15 SEA 02. Based on the RQA Pilot Study and Implementation Study, the approximately 276.5 acres designated for future residential reuse within the Seaside MRA were recommended as acceptable for future residential reuse with appropriate land use controls, such as the local Digging and Excavation on the Former Fort Ord Ordinance, construction support, and disclosures. Results of the RQA Pilot Study and Implementation Study are documented in the *Final Group 1 Residential Protocol Implementation Technical Report, Seaside Munitions Response Area, Former Fort Ord, Monterey County, California* (ESCA RP Team 2017a) and *Final Group 1 Supplemental Residential Protocol Implementation Technical Report, Seaside Munitions Response Area, Former Fort Ord, Monterey County, California* (ESCA RP Team 2017d). Based on regulatory agency and Army review, further assessment was not warranted for the designated future residential reuse areas in the Seaside MRA (ESCA RP Team 2017a and 2017d).

FORA provided construction support to manage the risk associated with the potential presence of military munitions during the realignment and construction of General Jim Moore Boulevard and Eucalyptus Road. No MEC was encountered. The construction support activities included: support throughout all construction tasks and phases; analog inspection for anomalies in root balls during tree removal, at locations where fence posts were removed and around wooden communication poles; and observation of excavations and asphalt removal as requested (ESCA RP Team 2017c).

The majority of MEC and MD encountered within the Seaside MRA were consistent with the documented historical uses of the area for weapons and troop training. The types of MEC and MD removed from the MRA included: blasting caps, igniters, primers, bulk explosives, hand grenades and hand grenade fuzes, rifle grenades, mines and mine fuzes, mine activators, flares and signals, smoke generating items, firing devices, rockets and rocket motors, mortars, projectors, various projectiles and projectile fuzes, and simulators. Some miscellaneous military munitions and MD were also recovered; evidence does not indicate that there were specific target ranges or impact areas for these miscellaneous items within the Seaside MRA (ESCA RP Team 2017c).

2.7.2. Parker Flats MRA Phase II

Scope of Removal Actions – The munitions responses (e.g., investigations and removal actions) in Parker Flats MRA Phase II were completed by the Army and FORA. Munitions responses completed in the designated future residential reuse areas and non-residential development reuse areas include the use of analog and DGM surveys, investigation of detected anomalies where analog technology was used and of anomalies that were most likely munitions where DGM technology was used. In both cases, military munitions encountered were removed, with MEC destroyed on site. A DGM survey, with an investigation of subsurface anomalies that were most likely military munitions and a removal of MEC and other munitions encountered was completed within unpaved roads, trails, and 5-foot (ft) buffer area along sides of the trails in the habitat reserve reuse areas. An analog-assisted surface removal of military munitions to 3 inches below ground surface was completed in all other portions of the habitat reserve reuse areas. A 1.1-acre portion of the habitat reserve reuse area underwent subsurface removal of military munitions as part of the removal action for MRS-13B (Army 2006).

A RQA Implementation Study was conducted of the munitions responses (e.g., investigations and removal actions) in the designated future residential reuse area of the Parker Flats MRA Phase II. The RQA Implementation Study activities included DGM investigations in portions of the designated future residential reuse area. The verification and quality assurance action was conducted by FORA on behalf of the Army under the ESCA.

The munitions responses (e.g., investigations and removal actions) conducted within the Parker Flats MRA Phase II were focused on addressing explosive hazards. Every military munition detected, and determined by UXO-qualified personnel to be MEC, was destroyed on site. A summary of the investigations and removal actions is provided in Section 2.8.

Site Evaluation – The evaluation process was documented by completion of a series of checklists for the Parker Flats MRA Phase II in accordance with the Group 1 RI/FS Work Plan (ESCA RP Team 2008c). Checklists prepared for the MRA are provided as Appendix E of the Group 1 RI/FS (Volume 1; ESCA RP Team 2017c). Evaluation of the removal action conducted in MRS-13B is documented in the RI/FS report for the Track 2 Parker Flats MRA (Army 2006).

The Parker Flats MRA Phase II is located in the central portion of the former Fort Ord (Figure 1). The Parker Flats MRA Phase II encompasses approximately 475 acres and contains all or portions of the following MRSs: MRS-04A, MRS-04A EXP, MRS-13B, MRS-15 MOCO.2, MRS-27A, MRS-27B, MRS-27C, MRS-44 EDC, and MRS-44 PBC (Figure 3).

Munitions responses completed by the Army and FORA resulted in investigation and removal of all subsurface target anomalies that potentially represented military munitions. Improved roads (i.e., consisting of asphalt pavement) within the Parker Flats MRA Phase II were not intrusively investigated, with the exception of a portion of Eucalyptus Road in Parcels E20c.2 and L20.18. Some structures were left in place, therefore, removal actions were conducted up to edge of the structures, although neither MEC nor MD were recovered. These structures include the nurses quarters located in the northwestern portion of Parcel E18.1.3 designated future residential reuse area, two latrines located in Parcel E21b.3 designated non-residential development reuse area, and a water tower located in Parcel E18.4 designated future residential reuse area. Additionally, trees greater than 5 inches in diameter at breast height were left in place.

FORA also completed a RQA Implementation Study in the approximately 146 acres designated for future residential reuse in the Parker Flats MRA Phase II. The RQA Implementation Study included a

comprehensive review and assessment of data from previous MEC investigations and removal actions to identify residual MEC risks or uncertainties. The identified risks and uncertainties were addressed with DGM investigation and removal of all subsurface anomalies that potentially represented MEC in approximately 1.6 acres of the northern portion of the designated future residential reuse area.

A field verification site walk was performed in MRS-04A EXP and in two grids within the northern designated future residential reuse area. The initial evaluation conducted for the remaining portions of the designated future residential reuse area indicated no evidence of remaining military munitions hazards. Based on the RQA Implementation Study, the approximately 146 acres designated for future residential reuse within the Parker Flats MRA Phase II were recommended as acceptable for future residential reuse with appropriate land use controls, such as the local Digging and Excavation on the Former Fort Ord Ordinances, construction support, and disclosures. Results of the RQA Implementation Study are documented in the *Final Residential Protocol Implementation Technical Report, Parker Flats Munitions Response Area, Former Fort Ord, Monterey County, California* (ESCA RP Team 2017b). Based on regulatory agency and Army review, further assessment was not warranted for the designated future residential reuse areas in the Parker Flats MRA (ESCA RP Team 2017b).

FORA provided construction support to manage the risk associated with the potential presence of military munitions during the realignment and construction of General Jim Moore Boulevard and Eucalyptus Road, including DGM survey and target investigation under Eucalyptus Road in Parcel E20c.2 and a portion of Eucalyptus Road in Parcel L20.18 located outside MRS boundaries. No MEC was encountered. The construction support activities included: support throughout all construction tasks and phases; analog inspection for anomalies in root balls during tree removal, at locations where fence posts were removed, and around wooden communication poles; and observation of excavations and asphalt removal as requested (ESCA RP Team 2017c).

The majority of MEC and MD encountered within the Parker Flats MRA Phase II were consistent with the documented historical uses of the area. Based upon the results of the remedial investigation, the northern portion of the Parker Flats MRA Phase II was used for training maneuvers; practice hand grenade training; mortar training using practice mortars and inert training mortars; and chemical, biological, and radiological training in MRS-04A only. The remedial investigation indicated that the southern portion of the Parker Flats MRA Phase II was used for training maneuvers, practice hand grenade training, mortar training, and projectile training. The types of MEC and MD removed from the MRA included: blasting caps, electric squibs, igniters, primers, bulk explosives, hand grenades and hand grenade fuzes, rifle grenades, mines and mine fuzes, flares and signals, smoke generating items, firing devices, rockets and rocket motors, mortars, projectors, and simulators. Various projectiles and projectile fuzes (MEC and MD) were also recovered primarily from the southern portion of the MRA. Some miscellaneous MEC and MD were also recovered; evidence does not indicate that there were specific target ranges or impact areas for these miscellaneous items within the Parker Flats MRA Phase II (ESCA RP Team 2017c).

2.8. Group 1 MRA Munitions Response Site Summary

2.8.1. Seaside MRA

The Seaside MRA includes MRS-15 SEA 01, MRS-15 SEA 02, MRS-15 SEA 03, and MRS-15 SEA 04 (Figure 2) where munitions responses (e.g., investigations and removal actions) were conducted by the Army and FORA from 1997 through 2013 and in 2017. Geophysical surveys were conducted over the MRSs within the Seaside MRA, with anomalies that potentially represented military munitions investigated and MEC and other munitions encountered removed.

Initial actions and sampling actions performed by the Army's contractors in MRS-15 SEA 01, MRS-15 SEA 02, MRS-15 SEA 03, and MRS-15 SEA 04 are summarized below as they were not the final action taken within the MRSs:

- Field Latrine Investigation of two latrines located within MRS-15 SEA 01 from March to November 1997 (USA 2001c)
- Grid Sampling in Small Arms Ranges (OE-15A Grid Sampling) partially located within MRS-15 SEA 01, MRS-15 SEA 02, MRS-15 SEA 03, and MRS-15 SEA 04 from October to November 1997 (USA 2000a)
- Grid Sampling (OE-15B Grid Sampling) at six sample grids located in MRS-15 SEA 01 and MRS-15 SEA 02 from October 1997 to February 1998 (USA 2000c)
- MEC Removal-Impact Area Roads and Trails on six roads located within MRS-15 SEA 01, MRS-15 SEA 02, MRS-15 SEA 03, and MRS-15 SEA 04 from March 1997 to March 1998 (USA 2001a)
- Removal action at fuel breaks along eastern boundary of MRS-15 SEA 01, MRS-15 SEA 02, MRS-15 SEA 03, and MRS-15 SEA 04 in 1998 (USA 2001f)
- MEC Removal to Support Lead-Contaminated Soil Remediation at Ranges 19 located partially within MRS-15 SEA 02, and Ranges 21, 22, and 23 located partially within MRS-15 SEA 01 from April 1997 to June 1999 (USA 2001b)
- MEC Removal to Support Lead-Contaminated Soil Remediation at Range 46 located partially within MRS-15 SEA 04 from April to August 1999 (USA 2001b)
- Grid sampling investigation at MRS-15 SEA 01, MRS-15 SEA 02, and MRS-15 SEA 04 in 1999 (USA 2001d)
- Impact Area Fuel Break Maintenance on five fuel breaks located within MRS-15 SEA 01, MRS-15 SEA 02, and MRS-15 SEA 04 in 2001 (Parsons 2001)
- Time-Critical Removal Action vegetation and surface MEC removal in MRS-15 SEA 01, MRS-15 SEA 02, and MRS-15 SEA 04 from December 2001 to March 2002 (performed as site preparation for a non-time-critical removal action [NTCRA]; Parsons 2006a)
- Remediation of Chemical Contamination in Soil in Range 18 (located in MRS-15 SEA 03 and 04) and Range 19 (located in MRS-15 SEA 02) from November 1998 through October 2002 (Shaw 2005)

Final MEC removal actions at MRS-15 SEA 01, MRS-15 SEA 02, MRS-15 SEA 03, and MRS-15 SEA 04, and a portion of the area located to the west of MRS-15 SEA 01 and MRS-15 SEA 02 boundaries, but within the MRA, were conducted by the Army and FORA, as described below.

MRS-15 SEA 01

A NTCRA and Phase I geophysical surveys, with anomalies that potentially represented military munitions investigated and MEC and other munitions encountered removed, were conducted by the Army's contractor Parsons Infrastructure & Technology Group, Inc. (Parsons) in MRS-15 SEA.1-4 (which encompasses MRS-15 SEA 01, MRS-15 SEA 02, MRS-15 SEA 03, and MRS-15 SEA 04) from 2002 to 2004 (Parsons 2006a). Removal actions included digital geophysical survey in accessible areas and analog surveys to depth of detection in areas not accessible by digital equipment. The Army's removal actions were completed on the Seaside MRA in 2004, with the exception of several SCAs located throughout the Seaside MRA. The SCAs were identified as data gaps in the SEDR (ESCA RP Team 2008b).

FORA conducted a NTCRA on the remaining portions of Seaside MRA identified as SCAs, located in MRS-15 SEA 01, MRS-15 SEA 02, MRS-15 SEA 03, and MRS-15 SEA 04, from December 2007 to October 2008 to complete the Army's work. Activities performed included: soil scraping and sifting, and digital geophysical surveys in accessible areas; and analog surveys to depth of detection in areas not accessible by digital equipment. This removal action was documented in two technical information papers (ESCA RP Team 2008a and 2011). The removal action resulted in the investigation of subsurface anomalies in the SCAs that potentially represented military munitions and the removal of military munitions encountered.

An RQA Implementation Study was conducted by FORA in 2011, 2013, and 2017 (ESCA RP Team 2017a and 2017d) in the designated future residential reuse portion of MRS-15 SEA 01. A comprehensive review and assessment of available data from previous munitions responses (e.g., investigations and removal actions) was completed. A baseline DGM survey target investigation was performed in approximately 68.7 acres of the designated future residential reuse portions of MRS-15 SEA 01. A soil scrape and post-scrape DGM survey target investigation was completed in an approximately 0.5-acre portion of the baseline DGM survey area in MRS-15 SEA 01. Following the soil scrape and post-scrape DGM survey and target investigation, a verification DGM survey and target investigation was conducted over two 100-ft by 100-ft soil scrape grids and four 100-ft by 100-ft grids previously investigated during baseline DGM survey activities. A modified EM61-MK2 towed-array using a sled with lowered sensors, referred to as "the FORA ESCA Sled", and Schonstedt Model GA-52/CX magnetometers were used to detect subsurface anomalies for investigation and removal of military munitions encountered to the depth of detection.

MRS-15 SEA 02

MRS-15 SEA 02 was included in the NTCRA and Phase I geophysical operations conducted by Parsons from 2002 to 2004 (Parsons 2006a) and in the NTCRA conducted by FORA from December 2007 to October 2008 (ESCA RP Team 2008a and 2011). Details of these actions are described above under MRS-15 SEA 01.

An RQA Implementation Study was conducted by FORA in 2011 (ESCA RP Team 2017a) for the designated future residential reuse portion of the MRS-15 SEA 02. A comprehensive review and assessment of available data from previous munitions responses (e.g., investigations and removal actions) was completed. No MEC risks or uncertainties that could cause regulatory concern for residential use were identified for the designated future residential reuse portion of MRS-15 SEA 02.

MRS-15 SEA 03

MRS-15 SEA 03 was included in the NTCRA and Phase I geophysical operations conducted by Parsons from 2002 to 2004 (Parsons 2006a) and in the NTCRA conducted by FORA from December 2007 to October 2008 (ESCA RP Team 2008a and 2011). Details of these actions are described above under MRS-15 SEA 01.

An RQA Implementation Study was conducted by FORA in 2011 (ESCA RP Team 2017a) in the designated future residential reuse portion of the MRS-15 SEA 03. A comprehensive review and assessment of available data from previous munitions responses (e.g., investigations and removal actions) was completed. A baseline DGM survey target investigation was performed in approximately 2.3 acres of the designated future residential reuse portions of MRS-15 SEA 03. The FORA ESCA Sled and Schonstedt Model GA-52/CX magnetometers were used to detect MEC for removal to depth of detection.

MRS-15 SEA 04

MRS-15 SEA 04 was included in the NTCRA and Phase I geophysical operations conducted by Parsons from 2002 to 2004 (Parsons 2006a) and in the NTCRA conducted by FORA from December 2007 to October 2008 (ESCA RP Team 2008a and 2011). Details of these actions are described above under MRS-15 SEA 01.

An RQA Pilot Study and Implementation Study was conducted by FORA in 2008, 2009, and 2011 in the designated future residential reuse portion of MRS-15 SEA 04 (ESCA RP Team 2017a). A comprehensive review and assessment of available data from previous munitions responses (e.g., investigations and removal actions) was completed. A baseline DGM survey target investigation was performed in approximately 23.8 acres of the designated future residential reuse portions of MRS-15 SEA 04. A soil scrape and post-scrape DGM survey target investigation was completed in approximately 7 acres of the baseline DGM survey area in MRS-15 SEA 04. Following the soil scrape and post-scrape DGM survey and target investigation, a verification DGM survey and target investigation was conducted over approximately 1.5 acres of the soil scrape area. The FORA ESCA Sled and Schonstedt Model GA-52/CX magnetometers were used to detect subsurface anomalies for investigation and removal of military munitions encountered to the depth of detection.

Areas Outside MRS Boundaries

An investigation was conducted by FORA from December 2007 to October 2008 and included the hillside west of the former alignment of General Jim Moore Boulevard and outside the western boundaries of MRS-15 SEA 01. Activities performed in the hillside area included digital geophysical surveys in accessible areas and analog surveys to depth of detection in areas not accessible by digital equipment. The removal action was documented in a technical information paper (ESCA RP Team 2008a). The removal action resulted in investigation of subsurface anomalies that potentially represented military munitions and the removal of MEC and other munitions in the hillside area.

An RQA Implementation Study was conducted by FORA in 2011, 2013, and 2017 (ESCA RP Team 2017a and 2017d) in the designated future residential reuse portion of the Seaside MRA including areas located to the west of MRS-15 SEA 01 and MRS-15 SEA 02 boundaries, but within the MRA. A comprehensive review and assessment of available data from previous munitions responses (e.g., investigations and removal actions) was completed for the area. A field verification site walk was performed using Schonstedt Model GA-52/CX magnetometers on two portions of the area west of MRS-15 SEA 01 to detect anomalies for investigation and the removal of military munitions encountered to the depth of detection. No MEC risks or uncertainties that could cause regulatory concern for residential use were identified for other areas designated for future residential reuse located to the west of MRS-15 SEA 01 and MRS-15 SEA 02 boundaries.

2.8.2. Parker Flats MRA Phase II

The Parker Flats MRA Phase II contains all or portions of the following MRSs: MRS-04A, MRS-04A EXP, MRS-13B, MRS-15 MOCO.2, MRS-27A, MRS-27B, MRS-27C, MRS-44 EDC, and MRS-44 PBC (Figure 3) where MEC investigations and removal actions were conducted by the Army and FORA from 1993 through 2011. Geophysical surveys were conducted over the MRSs within the Parker Flats MRA Phase II, with anomalies that potentially represented military munitions investigated and MEC and other munitions encountered removed.

Initial actions and sampling actions performed by the Army's contractors in MRS-04A, MRS-15 MOCO.2, MRS-27A, MRS-27B, MRS-27C, MRS-44 EDC, and MRS-44 PBC are summarized below as they were not the final action taken within the MRSs:

- Sampling investigation of six grids in MRS-04A from 1993 to 1994 (HFA 1994)
- Preliminary Assessment/Site Inspection of MRS-27A, MRS-27B, and MRS-27C in 1996 (USACE 1997a)
- Field Latrine Investigation and Removal in November 1997 (USA 2001c)
- Site Stats/Grid Stats (SS/GS) investigation at MRS-04A in 1997 (USA 2000b)
- SS/GS investigation at MRS-44 EDC in 1998 (USA 2001e)
- Grid sampling investigation at MRS-44 EDC and MRS-44 PBC in 1998 (USA 2001e)
- Grid sampling investigation at MRS-15 MOCO.2 in 1999 (USA 2001d)
- Removal action at a fuel break in MRS-44 EDC in 1998 (USA 2001f)
- Visual surface removal action in accessible portions of the Parker Flats MRA to include MRS-27A, MRS-27B, MRS-27C, and MRS-04A in 2001 (Parsons 2002)

Final actions at MRS-04A, MRS-04A EXP, MRS-13B, MRS-15 MOCO.2, MRS-27A, MRS-27B, MRS-27C, MRS-44 EDC, MRS-44 PBC, and areas within the Parker Flats MRA Phase II but outside MRS boundaries were conducted by the Army and FORA, as described below.

MRS-04A

In February 1998, a munitions response (removal action) was performed by the Army in MRS-04A, including areas where SS/GS sampling actions had previously been conducted. UXO Technicians used the Schonstedt Model GA-52/CX magnetometer to investigate 5-ft search lanes. Subsurface anomalies that potentially represented military munitions were investigated with MEC and other munitions removed (USA 2000b).

An RQA Implementation Study was conducted by FORA in 2011 and 2012 (ESCA RP Team 2017b) for the designated future residential reuse portion of the Parker Flats MRA Phase II, including all of MRS-04A. A comprehensive review and assessment of available data from previous munitions responses (e.g., investigations and removal actions was completed. No MEC risks or uncertainties that could cause regulatory concern for residential use were identified for MRS-04A.

MRS-04A EXP

The after action report for activities performed during the munitions response (removal action) described above for MRS-04A indicated that a munitions response (removal action) was performed by the Army in MRS-04A EXP in 2000; however, there is no text regarding MRS-04A EXP included in the after action report (USA 2000b).

An RQA Implementation Study was conducted by FORA in 2011 and 2012 (ESCA RP Team 2017b) for the designated future residential reuse portion of the Parker Flats MRA Phase II, including MRS-04A EXP. A comprehensive review and assessment of available data from previous munitions responses (e.g., investigations and removal actions) was completed. A field verification site walk was conducted using a Schonstedt Model GA-52/CX magnetometer to search for evidence of potential residual military

munitions concerns. Intrusive investigation of the subsurface anomalies (i.e., targets) identified during site walks were conducted. There were no military munitions or related materiel encountered.

MRS-15 MOCO.2

The Army performed a NTCRA in MRS-15 MOCO.2 in two phases completed in 2003 and 2005. Both phases included the same procedures: surveying with analog Schonstedt Model GA-52/CX magnetometers and investigating until the source of the anomaly was removed; digital mapping of the analog survey areas and investigation and resolution of detected subsurface anomalies; and QC/QA inspections. Analog and digital detection instruments were used over all portions of MRS-15 MOCO.2 to locate subsurface anomalies, and all detected anomalies were investigated and resolved (Parsons 2004 and 2006b).

MRS-27A

The remedial investigation conducted by FORA from 2008 to 2012 (ESCA RP Team 2013) included the portion of MRS-27A within Parker Flats MRA Phase II. The investigation included: digital geophysical survey in accessible areas of MRS-27A designated for non-residential development reuse; and in unpaved roads, trails, and 5-ft buffer area along sides of the trails, within the area of MRS-27A designated for habitat reserve. Analog surveys to depth of detection were completed in areas not accessible to digital geophysical survey for the designated non-residential development reuse area. An analog instrument-aided surface and near-surface investigation was conducted in the remaining portions designated for habitat reserve. Analog and digital detection instruments were used to locate subsurface anomalies and all detected anomalies were investigated and resolved (ESCA RP Team 2013).

MRS-27B

The remedial investigation conducted by FORA from 2008 to 2012 (ESCA RP Team 2013) included the portion of MRS-27B within Parker Flats MRA Phase II. The investigation included: digital geophysical survey in accessible areas of MRS-27B designated for non-residential development reuse; and in unpaved roads, trails, and 5-ft buffer area along sides of the trails, within the area of MRS-27B designated for habitat reserve. Analog surveys to depth of detection were completed in areas not accessible to digital geophysical survey for the designated non-residential development reuse area. An analog instrument-aided surface and near-surface investigation was conducted in the remaining portions of the area designated for habitat reserve. Analog and digital detection instruments were used to locate subsurface anomalies and all detected anomalies were investigated and resolved (ESCA RP Team 2013).

MRS-27C

The remedial investigation conducted by FORA from 2008 to 2012 (ESCA RP Team 2013) included MRS-27C. The investigation included digital geophysical survey in unpaved roads, trails, and 5-ft buffer area along sides of the trails, within MRS-27C. An analog instrument-aided surface and near-surface investigation was conducted in the remaining areas of MRS-27C. Analog and digital detection instruments were used to locate subsurface anomalies and all detected anomalies were investigated and resolved (ESCA RP Team 2013).

MRS-44 EDC

The remedial investigation conducted by FORA from 2008 to 2012 (ESCA RP Team 2013) included MRS-44 EDC. The investigation included digital geophysical survey in accessible areas of MRS-44 EDC. Analog surveys to depth of detection were completed in areas not accessible to digital geophysical survey. Analog and digital detection instruments were used over MRS-44 EDC to locate subsurface anomalies and all detected anomalies were investigated and resolved (ESCA RP Team 2013).

An RQA Implementation Study was conducted by FORA in 2011 and 2012 (ESCA RP Team 2017b) for the designated future residential reuse portion of the Parker Flats MRA Phase II, including a portion of MRS-44 EDC. A comprehensive review and assessment of available data from previous munitions responses (e.g., investigations and removal actions) was completed. No MEC risks or uncertainties that could cause regulatory concern for residential use were identified for the portion of MRS-44 EDC designated for future residential reuse.

MRS-44 PBC

A munitions response (removal action) was completed by the Army for MRS-44 PBC in 2000 (USA 2001e). The MEC removal action covered the entire MRS-44 PBC, including grids where 100% grid sampling investigations had previously been conducted. UXO Technicians used the Schonstedt Model GA-52/CX magnetometer to investigate the 5-ft search lanes (USA 2001e).

MRS-13B

A munitions response (removal action) was completed by the Army for MRS-13B from 1995 to 1998 (Army 2006). UXO Technicians used the Schonstedt Model GA-52/CX magnetometer to investigate 654 100-ft by 100-ft grids and partial grids. The MEC and other munitions, and MD encountered during the removal action were removed (Army 2006).

Areas Outside MRS Boundaries

Initial actions and sampling actions performed by the Army's contractors in areas outside of MRS boundaries but within the Parker Flats MRA Phase II included the following:

- Grid sampling in six grids located south of MRS-04A by USA in 2000 (USA 2001g)
- Sampling investigation in fifteen whole and partial grids throughout the northern portion of the Parker Flats MRA Phase II from 1993 to 1994 (HFA 1994)
- Visual surface removal action in accessible portions of areas located outside MRS boundaries in 2001 (Parsons 2002)

The remedial investigation conducted by FORA from 2008 to 2012 (ESCA RP Team 2013) included portions of the Parker Flats MRA Phase II located outside of MRS boundaries. The investigation included digital geophysical survey in accessible areas of designated future residential reuse areas, non-residential development reuse areas, and in unpaved roads, trails, and 5-ft buffer area along sides of the trails, within areas designated for habitat reserve. An analog instrument-aided surface and near-surface investigation was conducted in the remaining portions designated for habitat reserve. Analog surveys to depth of detection were completed in portions of the designated future residential reuse areas and non-residential development reuse areas not accessible to digital geophysical survey. Analog and digital detection

instruments were used to locate subsurface anomalies and all detected anomalies were investigated and resolved (ESCA RP Team 2013).

The RQA Implementation Study conducted by FORA in 2011 and 2012 (ESCA RP Team 2017b) for the designated future residential reuse portions of the Parker Flats MRA Phase II included areas designated for future residential reuse located outside of MRS boundaries, but within the MRA. A comprehensive review and assessment of available data from previous munitions responses (e.g., investigations and removal actions) was completed. A field verification site walk was conducted in a small area outside of MRS boundaries located east of MRS-04A EXP and south of Gigling Road using a Schonstedt Model GA-52/CX magnetometer to search for evidence of residual MEC. Intrusive investigation of the subsurface anomalies identified during the site walk was conducted. There were no military munitions or munitions-related items discovered. A baseline DGM survey target investigation was performed in approximately 1.6 acres of the northwestern portion of the MRA designated for future residential reuse portion. The FORA ESCA Sled and the EM61-MK2 hand cart with lowered coils consistent with the FORA ESCA Sled were used to detect anomalies for investigation and the removal of MEC and other munitions to the depth of detection. No MEC risks or uncertainties that could cause regulatory concern for residential use were identified for the remaining portions of the MRA designated for future residential reuse located outside MRS boundaries.

2.9. Current and Potential Future Land and Resource Uses

The future land uses for the Group 1 MRAs, summarized below, are based upon the Fort Ord Base Reuse Plan (FORA 1997). Future land use information is also included in the *Installation-Wide Habitat Management Plan for Former Fort Ord, California* ("the HMP"; USACE 1997b) and modifications to the HMP provided in *Assessment, East Garrison – Parker Flats Land Use Modifications, Fort Ord, California* (Zander 2002), and *Memorandum of Understanding Concerning the Proposed East Garrison/Parker Flats Land-Use Modification* (Army 2004).

2.9.1. Seaside MRA

The Seaside MRA is designated for future residential reuse and non-residential development reuse with borderland interface (Table 2 and Figure 5). The reasonably foreseeable reuses being considered for the Seaside MRA include:

- Residential — Approximately 276.5 acres, comprised of portions of Parcels E24, E34, E23.1, and E23.2, are designated for future residential reuse. Construction of buildings and roads, installation of utilities, as well as the activities of future residents are expected within these reuse areas.
- Non-Residential Development — Approximately 146.5 acres, comprised of portions of Parcels E24, E34, E23.1, and E23.2, are designated for non-residential development reuse including roadways and a 100-ft borderland development buffer along the Natural Resources Management Area (NRMA) interface. A 100-ft buffer from the borderland interface along the NRMA was identified in the ESCA (USACE/FORA 2007); however, the buffer width is subject to change based on future fire-wise planning by FORA. The borderland development area along the NRMA interface, designated as habitat reserve, was established in the HMP (USACE 1997b). Development encompassing infrastructure activities, such as roadway and utility construction, is expected to occur. Roadway expansion and utility construction will constitute the major development along the western portion of the MRA.

2.9.2. Parker Flats MRA Phase II

The Parker Flats MRA Phase II is designated for future residential reuse, non-residential development reuse with borderland interface, and habitat reserve (Table 2 and Figure 4). The reasonably foreseeable reuses being considered for the Parker Flats MRA Phase II include:

- Residential — Approximately 146 acres, including all of Parcels E18.1.3 and E18.4 and portions of Parcels E18.1.1, E18.1.2, E19a.1, and E20c.2, are designated for future residential reuse. Construction of buildings and roads, installation of utilities, as well as the activities of future residents are expected within these areas of the MRA.
- Non-Residential Development — Approximately 162 acres are designated for non-residential development reuse including Parcel L23.2 and the adjacent portion of Parcel L20.18, Parcel E21b.3, and portions of Parcels E20c.2, E19a.3, E18.1.1, and E18.1.2. Reuses include roadway within Parcel E20c.2 and a 100-ft borderland development buffer along the borderland interface in Parcel E19a.3. A 100-ft buffer from the borderland interface was identified in the ESCA (USACE/FORA 2007); however, the buffer width is subject to change based on future fire-wise planning by FORA. The borderland development area was established in the HMP (USACE 1997b). Development encompassing infrastructure activities, such as roadway and utility construction, is expected to occur. Other uses anticipated in the parcels include development of a cemetery, institutional structures and parking, and commercial development.
- Habitat Reserve — Approximately 167 acres, including Parcel E19a.2 and a portion of Parcel E19a.4, are designated for habitat reserve. Use of the habitat reserve area is expected to include equestrian access.

2.10. Summary of Site Risks

Munitions response actions have been completed at the Group 1 MRAs, significantly reducing the potential risks to human health and the environment from the explosive hazards associated with military munitions. Because detection technologies may not have detected every military munition present, a future land user (i.e., receptors) may encounter MEC. The risk was evaluated in a MEC Risk Assessment as part of the Group 1 RI/FS (Volume 2; ESCA RP Team 2017c). The 1.1-acre MRS-13B Habitat Reserve area was evaluated in the RI/FS for the Track 2 Parker Flats MRA (Army 2006).

The Fort Ord Ordnance and Explosives Risk Assessment Protocol (Malcolm Pirnie 2002) was developed to qualitatively estimate the risk to future land users of the property from residual MEC in terms of an "Overall MEC Risk Score" for each receptor expected to be present during area development and reuse.

The MEC Risk Assessment Protocol results are based on three key factors (MEC Hazard Type, Accessibility, and Exposure) that are assigned use-specific values and are weighted in importance. These factors were used to develop an Overall MEC Risk Score for each receptor at a given reuse area. The Overall MEC Risk Scores are expressed in letters A through E, with A being the lowest risk and E being the highest risk.

The qualitative Overall MEC Risk Scores were used in the Group 1 Feasibility Study (Volume 3; ESCA RP Team 2017c) to guide the development and evaluation of response alternatives for the Group 1 MRAs during development and for reasonably anticipated future uses. The future land users of the property identified for analysis in the MEC Risk Assessment and a summary of the Overall MEC Risk Scores for each receptor for the reuse areas within the Group 1 MRAs are provided below. Although the MEC encountered during previous munitions responses (removal actions) have been removed from the Group 1

MRAs, the potential exists for residual MEC to remain in the subsurface at the MRAs. Therefore, the risks associated with subsurface (intrusive) receptors (e.g., maintenance workers and construction workers) are assumed to remain at the Group 1 MRAs at a level that requires mitigation and remedial alternatives were evaluated in a Feasibility Study.

The response actions selected in this ROD are necessary to protect the public health or welfare from the possible presence of subsurface MEC.

Seaside MRA

The receptors identified for analysis in the MEC Risk Assessment for the Seaside MRA included: recreational users, residents, maintenance workers, construction workers, and trespassers. The Risk Assessment (Volume 2; ESCA RP Team 2017c) focused on two sectors in the Seaside MRA: (1) future residential reuse area, and (2) non-residential development reuse area.

The Risk Assessment for the Seaside MRA (Volume 2; ESCA RP Team 2017c) estimated the Overall MEC Risk Scores of "A" (lowest risk) for both surface and subsurface receptors (e.g., residents, recreational users, construction workers, maintenance workers, and trespassers) in the future residential reuse area and the non-residential development reuse area.

Parker Flats MRA Phase II

The receptors identified for analysis in the MEC Risk Assessment for the Parker Flats MRA Phase II included: recreational users, residents, habitat monitor, maintenance workers, construction workers, and trespassers. The Risk Assessment (Volume 2; ESCA RP Team 2017c) focused on four sectors in the Parker Flats MRA Phase II: (1) future residential reuse areas, (2) non-residential development reuse area Parcel L23.2 and a portion of Parcel L20.18, (3) remaining non-residential development reuse area, and (4) habitat reserve reuse area.

The Risk Assessment for the Parker Flats MRA Phase II estimated the Overall MEC Risk Scores of "A" (lowest risk) for both surface and subsurface receptors (e.g., residents, recreational users, construction workers, maintenance workers, and trespassers) in the future residential reuse areas. The Overall MEC Risk Scores for the non-residential development reuse areas in Parcel L23.2 and the adjacent portion of Parcel L20.18 were "A" (lowest risk) for surface receptors intruding down to 6 inches below ground surface (e.g., recreational users and trespassers) and ranged from "A" (lowest risk) to "B" (low risk) for receptors intruding down to 60 inches below ground surface (e.g., maintenance workers and construction workers). For both surface and subsurface receptors (e.g., recreational users, construction workers, maintenance workers, and trespassers) in all other non-residential development reuse areas, an Overall MEC Risk Scores of "A" (lowest risk) was estimated. The Overall MEC Risk Scores for habitat reserve reuse areas were estimated as "A" (lowest risk) for receptors anticipated to stay on trails and in areas adjacent to trails (e.g., habitat monitor and recreational user). The Overall MEC Risk Scores for receptors intruding below ground surface in areas outside of trails in the habitat reserve reuse areas (e.g., maintenance worker and trespasser) ranged from "D" (high risk) to "E" (highest risk).

The MRS-13B Habitat Reserve area was evaluated in the risk assessment for the Track 2 Parker Flats MRA (Army 2006). No MEC were encountered during subsurface removal activities. The area would be considered low risk using the Fort Ord Risk Assessment Protocol because density and depth input factors would be negligible. Overall risk scores were not applied to the area because no data was available to support the presence of MEC in the area.

A summary of the Overall MEC Risk Scores for each receptor for the reuse areas within the Group 1 MRAs is provided below.

MRA	Reuse Area	Receptor	Overall MEC Risk Score				
			A Lowest	B Low	C Medium	D High	E Highest
Seaside MRA	Residential	Resident	✓				
		Recreational User	✓				
		Construction Worker	✓				
		Maintenance Worker	✓				
		Trespasser	✓				
	Non-Residential Development	Recreational User	✓				
		Maintenance Worker	✓				
		Construction Worker	✓				
		Trespasser	✓				
Parker Flats MRA Phase II	Residential	Resident	✓				
		Recreational User	✓				
		Construction Worker	✓				
		Maintenance Worker	✓				
		Trespasser	✓				
	Non-Residential Development	Maintenance Worker	✓	✓			
		Construction Worker	✓	✓			
		Recreational User	✓				
		Trespasser	✓				
	Habitat Reserve	Recreational User	✓				
		Maintenance Worker				✓	✓
		Habitat Monitor	✓				
		Trespasser				✓	✓

2.11. Remedial Action Objectives

The RAO for the Group 1 MRAs is based on the MEC Risk Assessment results and on EPA's Remedial Investigation/Feasibility Study Guidance (EPA 1988) to achieve the EPA's threshold criteria of "Overall Protection of Human Health and the Environment" and "Compliance with ARARs." The RAO developed for the protection of human health and the environment for the Group 1 MRAs is to prevent or reduce the potential for the Group 1 MRA reuse receptors to come in direct contact with MEC or other munitions potentially remaining in subsurface and minimize potential impacts from such exposures.

As described in EPA's Land Use in the CERCLA Remedy Selection Process (EPA 1995), "Remedial action objectives provide the foundation upon which remedial cleanup alternatives are developed. In general, remedial action objectives should be developed to identify alternatives that would achieve cleanup levels associated with the reasonably anticipated future land use over as much of the site as possible. EPA's remedy selection expectations described in section 300.430(a)(l)(iii) of the NCP should also be considered when developing remedial action objectives. Where practicable, EPA expects to treat principal threats, to use engineering controls such as containment for low-level threats, to use institutional controls to supplement engineering controls…."

For the purpose of this ROD, the contaminant of concern within the Group 1 MRAs is MEC. The potential presence of chemicals of concern in soil (lead and/or explosives constituents) is being addressed under the Army Basewide Range Assessment Program (Shaw 2012) and the Installation Restoration Program Site 39 (Section 2.5).

Consistent with EPA's guidance: (1) the principal threats at the Group1 MRAs have already been treated (i.e., munitions responses [removal actions] have been completed); and (2) institutional controls (herein referred to as land use controls or LUCs) are considered appropriate remedial alternatives.

2.12. Description of Alternatives

Three remedial alternatives were evaluated for the Group 1 MRAs in the Group 1 RI/FS (ESCA RP Team 2017c).

Long-term management measures (deed notice and restrictions, annual monitoring, and five-year review reporting) are implementation and management measures for Alternatives 2 and 3. Long-term management measures are described further in Section 2.14.3. The cost associated with implementing these measures in the Group 1 MRAs over a period of 30 years is approximately $562,000.

The Risk Assessment for the Group 1 MRAs (Volume 2; ESCA RP Team 2017c) estimated the Overall MEC Risk Scores as described in Section 2.10. Although previous munitions responses (removal actions) have been conducted on the MRAs, the potential exists for MEC to remain in the subsurface. Therefore, the risks associated with intrusive receptors (e.g., maintenance workers, construction workers, residents, recreational users, and trespassers) are assumed to remain at a level that requires mitigation. The three remedial alternatives developed to mitigate this risk are summarized below.

Alternative 1 – No Further Action

This alternative assumes no further action would be taken at the Group 1 MRAs to address potential MEC risks for those receptors identified in the Risk Assessment. This alternative is provided as a baseline for comparison to the other remedial alternatives, as required under CERCLA and the NCP. There are minimal costs associated with implementation of this alternative.

Alternative 2 – Land Use Controls

This alternative assumes that LUCs, without additional MEC remediation on any portion of the Group 1 MRAs, would be implemented to address potential MEC risks for intrusive or ground-disturbing reuse. The LUCs alternative consists of military munitions recognition and safety training, construction support, access management measures, continuation of the existing residential use restrictions in areas designated for non-residential development reuse or for habitat reserve, and restrictions against inconsistent uses (applicable to the habitat reserve areas). The components of the alternative are described below:

Military Munitions Recognition and Safety Training - People who conduct intrusive operations during the designated reuses and development at the Group 1 MRAs would be required to attend the military munitions recognition and safety training to increase their awareness of and ability to recognize when they may have encountered a munition. Prior to planned intrusive activities, the property owner would be required to notify FORA or its successor to provide military munitions recognition and safety training to every worker who will perform intrusive activities.

Construction Support - UXO-qualified personnel would perform construction support to manage the risk associated with the potential presence of military munitions during intrusive or ground-disturbing activities at Group 1 MRA reuse areas. Construction support would be arranged during the planning stages of the project, in accordance with the local municipal code requirements for an excavation permit, prior to the start of intrusive activities. The level of construction support will be determined on a case-by-case basis depending on the type and location of planned intrusive activities. Two levels of construction support have been identified: on-call construction support and onsite construction support.

For on-call construction support, UXO-qualified personnel must be contacted prior to the start of intrusive activities to ensure their availability, advised about the project, and placed "on call" to assist if suspect munitions items are encountered. If military munitions are encountered during construction support activities, the intrusive and ground-disturbing work will immediately cease; no attempt will be made to disturb, remove, or destroy munitions or suspect munitions encountered, and the local law enforcement agency will be immediately notified. Local law enforcement will request appropriate explosives or munitions emergency response from Explosive Ordnance Disposal or local bomb squad with equivalent training.

For onsite support, UXO-qualified personnel must attempt to identify and remove explosive hazards encountered in the construction footprint prior to intrusive construction activities. If authorized, recovered MEC will be either destroyed on site in compliance with approved procedures, or securely stored pending arrival of Explosive Ordnance Disposal or local bomb squad.

Construction support may be applicable in the short-term during development of the reuse area, or in the long-term during established reuse. Based on the site information, on-call construction support is generally expected to be sufficient to support the anticipated future reuse of the property.

Access Management Measures - Access management measures would be required in the portions of Parker Flats MRA Phase II designated for habitat reserve. Access management measures such as informational displays, fencing, and security patrols, would be implemented to discourage access by unauthorized personnel to habitat reuse areas outside of trails. Access outside of trails would be allowed for specific personnel conducting authorized activities (such as biologists performing habitat monitoring activities).

Residential Use Restriction - Residential use restriction placed on the Group 1 MRA property at the time of property transfer to FORA would be maintained only for areas designated for non-residential development reuse or for habitat reserve. Restrictions prohibiting residential use in the designated future residential reuse areas would be removed. For the purpose of this decision document, residential use includes: single family or multi-family residences; childcare facilities; playgrounds; hospitals; nursing homes or assisted living facilities; and any type of educational facility for children or young adults in grades kindergarten through 12.

Restrictions Against Inconsistent Uses - For the habitat reserve portion of the Parker Flats MRA Phase II, uses that are inconsistent with the HMP would be prohibited, including but not limited to residential, school, and commercial/industrial development.

The LUCs included in this alternative are based on the planned reuse of the Group 1 MRAs. The specific details of LUCs would be presented in the RD/RA Work Plan and/or LUCIP/OMP. The cost associated with implementing this alternative is estimated to be $1.3 million. In addition, a long-term management cost of $562,000 applies to this alternative.

Alternative 3 – Additional Subsurface MEC Remediation

This alternative assumes that a subsurface removal of military munitions would be conducted throughout the entire footprint of the Seaside MRA and Parker Flats MRA Phase II. This alternative includes implementing the appropriate type of vegetation clearance, if necessary, and the implementation of additional munitions responses (e.g., investigation and removal actions). Vegetation clearance would be conducted in a manner consistent with the HMP (USACE 1997b) and ARARs.

Additional subsurface munitions removal actions would involve a geophysical survey to identify anomalies, investigation of selected anomalies, and the removal of military munitions to the depth of detection. During intrusive activities, exclusion zones will be established and maintained in compliance with the current version of DoD's Fragmentation Data Review Form (Frag Data Base) for the munition with the greatest fragmentation distance (MGFD) expected to be encountered. The best available and appropriate detection technologies will be used to conduct geophysical surveys. Standard industry procedures based on the DoD Explosive Ordnance Disposal 60A (SERIES) will be used for the detonation of MEC. Locations at which recovered MEC will be destroyed by open detonation or using DoD Explosives Safety Board (DDESB)-approved contained destruction technology will be sited based on DoD explosives safety criteria (DoD M 6055.9, Ammunition and Explosive Safety Standards (VOL 1 to 8) or DoD Explosives Safety Regulation 6055.9). If appropriate, engineering controls (see Frag Data Base) or the buried explosion module will be used.

The RD/RA Work Plan or a similar document will detail the vegetation clearance methods, and the detection and detonation technologies, to include engineering controls, to be used. Post-remediation habitat monitoring would be required within the habitat reserve area. The cost associated with implementing this alternative is estimated to be $21.8 million. In addition, a long-term management cost of $562,000 applies to this alternative.

2.13. Principal Threat Wastes

Munitions responses have been completed by the Army and FORA at the Group 1 MRAs. MEC items which would meet the Principal Threat Waste (PTW) criteria identified as part of the investigation have already been addressed. Military munitions that may remain present, if encountered, may constitute a principal threat to human health due to the potential for it to pose an explosive hazard if moved, handled or disturbed. Munitions, if encountered, and determined by qualified personnel (e.g., UXO-qualified personnel) to pose an explosive hazard are normally destroyed on site and would be a PTW as defined by CERCLA, the NCP and EPA guidance. The selected remedy includes LUCs because detection technologies may not have detected every military munition present. The source materials that may constitute principal threats at the Group 1 MRAs are MEC that potentially remain below the ground surface (in the subsurface).

The selected remedy will address the residual threats through implementing the following LUCs:

- Military munitions recognition and safety training for workers who will conduct ground-disturbing or intrusive activities;
- Construction support to manage the risk associated with the potential presence of military munitions for ground-disturbing or intrusive activities;
- Access management measures in areas designated for habitat reserve;

- Restrictions prohibiting residential use (as defined in this ROD) in areas designated for non-residential development reuse or for habitat reserve; and
- Restrictions against inconsistent uses (applicable to the habitat reserve areas).

2.14. Selected Remedy

2.14.1. Summary of the Rationale for the Selected Remedy

Each alternative developed for the Group 1 MRAs was assessed against the nine EPA evaluation criteria described in Table 3 for the Seaside MRA and Table 4 for the Parker Flats MRA Phase II. Using the results of this assessment, the alternatives were compared and a remedy selected for the MRAs. The remedy that best meets the nine evaluation criteria is Alternative 2 (Land Use Controls). This remedy was selected because LUCs will be protective of human health for future land users, and would be effective in the short- and long-term at mitigating the risk to workers conducting ground-disturbing or intrusive activities from MEC that is potentially present. This remedy will require a low level of effort to implement, a moderate level of effort to administer over time, and would be cost effective. The remedy can be implemented in a manner consistent with Federal and State guidance.

The Army and EPA have jointly selected the remedy. The DTSC reviewed the ROD and its concerns were addressed.

Community acceptance is discussed in the Responsiveness Summary (Section 3.0). The selected remedy is further described below.

2.14.2. Description of the Selected Remedy

The selected remedial alternative for the Group 1 MRAs is Alternative 2 (Land Use Controls). LUCs and their implementation strategy are described below.

Land Use Controls

The LUCs that will be implemented at the Group 1 MRAs include requirements for: (1) military munitions recognition and safety training for workers who will conduct ground-disturbing or intrusive activities; (2) construction support to manage the risk associated with the potential presence of military munitions for ground-disturbing or intrusive activities; (3) access management measures in areas designated for habitat reserve; (4) restrictions prohibiting residential use (as defined in this ROD) in areas designated for non-residential development reuse or for habitat reserve; and (5) restrictions against inconsistent uses (applicable to the habitat reserve areas).

- **Military munitions recognition and safety training** - For the areas addressed in this ROD, ground-disturbing or intrusive activities are expected to occur. Personnel who conduct ground-disturbing or intrusive operations at these areas will be required to attend the military munitions recognition and safety training to increase their awareness of and ability to recognize when they may have encountered a munition. Prior to conducting ground-disturbing or intrusive activities, the property owner will be required to notify FORA or its successor to provide military munitions recognition and safety training to every worker who will perform ground-disturbing or intrusive activities.

  Military munitions recognition and safety training will be evaluated as part of the five-year review process to determine if the training program should continue. If further evaluation indicates that this LUC is no longer necessary, the program may be discontinued with regulatory approval.

- **Construction support** - Construction support to manage the risk associated with the potential presence of military munitions performed by UXO-qualified personnel is required during intrusive or ground-disturbing activities at the Seaside MRA and Parker Flats MRA Phase II reuse areas. Construction support will be arranged during the planning stages of the project, in accordance with the local municipal code requirements for an excavation permit, prior to the start of intrusive or ground-disturbing activities. The level of construction support will be determined on a case-by-case basis depending on the type and location of planned intrusive activities. Two levels of construction support have been identified: on-call construction support and onsite construction support.

  For on-call construction support, UXO-qualified personnel must be contacted prior to the start of intrusive activities to ensure their availability, advised about the project, and placed "on call" to assist if suspect munitions items are encountered during intrusive activities. If military munitions are encountered during construction support activities, the intrusive and ground-disturbing work will immediately cease; no attempt will be made to disturb, remove, or destroy the suspect munitions item, and the local law enforcement agency will be immediately notified. Local law enforcement will request appropriate explosives or munitions emergency response from Explosive Ordnance Disposal or local bomb squad with equivalent training.

  For onsite support, UXO-qualified personnel must attempt to identify and remove any explosive hazards in the construction footprint prior to intrusive construction activities. If authorized, recovered MEC will be either destroyed on site in compliance with approved procedures, or securely stored pending arrival of Explosive Ordnance Disposal or local bomb squad.

  Construction support may be applicable in the short-term during development of the reuse area, or in the long-term during established reuse. Based on the site information, on-call construction support is generally expected to be sufficient to support the anticipated future reuse of the properties, but onsite construction support may be appropriate depending on the type and location of planned intrusive activities.

  Construction support will be evaluated as part of the five-year review process to determine if the LUC should continue. If the munitions-related data collected during the development of the reuse areas indicates that this LUC is no longer necessary, construction support may be discontinued with regulatory approval.

- **Access management measures** - Access management measures will be required in the portions of Parker Flats MRA Phase II designated for habitat reserve. Access management measures, such as informational displays, fencing, and security patrols, will be implemented to discourage access by unauthorized personnel to habitat reuse areas outside of trails. Access will be allowed for specific personnel conducting authorized activities (such as biologists performing habitat monitoring activities).

- **Restrictions prohibiting residential use** - Residential use restriction placed on the Seaside MRA and Parker Flats MRA Phase II properties at the time the property was transferred to FORA will be maintained for the areas designated for future non-residential development reuse or habitat reserve. For the purpose of this document, residential reuse includes: single family or multi-family residences; childcare facilities; playgrounds; hospitals; nursing homes or assisted living facilities; and any type of educational facility for children or young adults in grades kindergarten through 12.

- **Restrictions against inconsistent uses** - For the habitat reserve, including Parcel E19a.2 and a portion of Parcel E19a.4, uses that are inconsistent with the HMP are prohibited, including but not limited to residential, school, and commercial/industrial development.

2.14.3 Land Use Control Implementation Strategy

The performance objectives for the LUCs that are part of the remedy are the following:

- **Military munitions recognition and safety training:** (1) to ensure that land users involved in ground-disturbing or intrusive activities are educated about the possibility of encountering military munitions; and (2) to ensure that land users involved in ground-disturbing or intrusive activities stop the activity when a suspect munition or munition is encountered and report the encounter to the appropriate authority.
- **Construction support:** supports the management of the risk associated with the potential presence of military munitions during ground-disturbing or intrusive activities, and ensures such activities are coordinated with UXO-qualified personnel so encounters with a suspect munition or a munition will be handled properly. Mechanisms for implementing the requirement for construction support may include local ordinance(s), and details of implementation will be described in the RD/RA Work Plan and/or LUCIP/OMP for the LUCs.
- **Access management measures:** to discourage access by unauthorized personnel to habitat reuse areas outside of trails. Implementation details, such as informational displays, fencing and security patrols, will be described in the RD/RA Work Plan and/or LUCIP/OMP for the LUCs.
- **Restrictions prohibiting residential use:** to ensure that any proposals to allow residential use (as defined in this ROD) in areas designated for future non-residential development reuse or habitat reserve, or any proposals for modifications to residential restrictions in areas designated for future non-residential development reuse or habitat reserve, are approved by EPA and Army in coordination with DTSC.
- **Restrictions against inconsistent uses (applicable to the habitat reserve)**: to maintain the integrity of the habitat management and conservation systems that are in place until EPA and the Army determine that they are no longer necessary.

Each component of the LUCs will remain in place until EPA and DTSC concur that the site is protective of human health and the environment without LUC so as to allow for unrestricted use and exposure. This concurrence may be based on: (1) new information (e.g., limited geophysical mapping, site development); or (2) where the depth of soil disturbance related to ground-disturbing or intrusive activities is sufficient to address the uncertainty of MEC remaining in the subsurface and military munitions encountered during such activities is removed.

For any proposals for a land use change that are inconsistent with the use restrictions and assumptions described in this ROD, the recipient of the property must consult with and obtain the approval of the Army, EPA and, as appropriate, State regulators, or the local authorities in accordance with the federal deeds and the provisions of all applicable CRUPs. The land use restrictions and notices set forth in the federal deeds and provisions set forth in the CRUPs run with the land and are binding upon all future owners and occupants of the property.

The LUCs and the implementation actions will be explained in more detail in the RD/RA Work Plan and/or LUCIP/OMP. In accordance with the ESCA, the AOC, and the FFA Amendment No.1, FORA will prepare a LUC remedial design which shall contain implementation, monitoring and maintenance actions, including periodic inspections and reports. Within 90 days of the signature of the ROD, FORA shall provide the LUC remedial design to EPA and DTSC for review and approval.

As part of the implementation, the RD/RA Work Plan and/or LUCIP/OMP will also describe the following long-term management measures:

- **Land use restrictions:** The deeds to FORA for the Seaside MRA and Parker Flats MRA Phase II parcels restrict residential use. The deeds will be modified to remove the residential use restriction on the designated future residential reuse areas. The residential use restriction will remain for the areas designated for future non-residential development reuse or habitat reserve. Residential use includes: single family or multi-family residences; childcare facilities; playgrounds; hospitals; nursing homes or assisted living facilities; and any type of educational facility for children or young adults in grades kindergarten through 12. It should be noted that the CRUPs for the Seaside MRA and Parker Flats MRA Phase II parcels restrict residential use. The DTSC will modify the CRUPs, as appropriate, to be consistent with the identified remedy. For the habitat reserve, including Parcel E19a.2 and portions of Parcel E19a.4, uses that are inconsistent with the HMP are prohibited, including but not limited to residential, school, and commercial/industrial development.
- **Annual monitoring and reporting:** FORA, or its successor entity under the ESCA and the AOC, will perform annual monitoring and reporting. FORA or its successor entity will notify the regulatory agencies, as soon as practicable, of MEC-related data identified during use of the property, and report the results of monitoring activities annually.
- **Five-year review reporting:** Five-year reviews will be conducted by the Army in accordance with CERCLA Section 121(c) and the Fort Ord FFA. The five-year review will evaluate the protectiveness of the selected remedy. Based on the evaluation, the selected LUCs may be modified or discontinued, with the approval of the EPA and DTSC.

Under the ESCA and the AOC, FORA will implement the selected remedy. The RD/RA Work Plan and/or LUCIP/OMP will include requirements to ensure future property owners are informed of the potential of encountering MEC. The RD/RA Work Plan and/or LUCIP/OMP will specify that future property owners will be informed through the following mechanisms:

- notices and disclosures included in federal deeds at the time of property transfer;
- annual notification to property owners of the munitions recognition and safety training requirements and information on how to obtain the training;
- annual distribution of educational literature to property owners that warns of the dangers associated with military munitions, includes images of the military munitions that may be present, and the safety and notification procedures to follow if a munition or suspect munition is encountered; and
- coordination with local jurisdictions prior to ground-disturbing or intrusive activities, as required by the local Digging and Excavation on the Former Fort Ord Ordinance.

The standard procedure for reporting an encounter with a munition or suspect munition in the transferred former Fort Ord property is to report the encounter immediately to the local law enforcement agency having jurisdiction on the property. Local law enforcement will request appropriate explosives or munitions emergency response from Explosives Ordnance Disposal or local bomb squad, which has the training required to evaluate and remove or destroy the munition encountered, as required under applicable laws and regulations.

During on-call construction support, any encounter with military munitions will be reported to local law enforcement for a response by Explosives Ordnance Disposal or local bomb squad personnel. If the military munitions are determined to be MEC, the probability of encountering MEC will be reassessed. If the probability of encountering MEC is low, construction may resume with construction support. If the probability of encountering MEC is moderate to high, onsite construction support or the conduct of an additional munitions response is required. If onsite construction support is required, UXO-qualified

personnel will attempt to identify and remove any explosive hazard in the construction footprint prior to intrusive construction activities. If authorized, recovered MEC will be either destroyed on site in compliance with approved procedures, or securely stored pending arrival of Explosive Ordnance Disposal or local bomb squad.

FORA or its successor will notify the regulatory agencies, as soon as practicable, of MEC-related data identified during use of the property, and report the results of monitoring activities annually. The Army will conduct five-year reviews. If additional evaluation or work or modification of the selected remedy is proposed based on such review, it will be implemented in accordance with Paragraph 34 of the AOC, or Section C.4.1.7 of the ESCA.

Pursuant to the ESCA, the AOC and the FFA Amendment No.1, FORA assumes full responsibility for completion of necessary CERCLA response actions (except Army Obligations) which include implementing, maintaining, reporting, and enforcing the land use controls. Although the Army has already transferred the responsibilities to implement, maintain, monitor, report on, and enforce LUCs to another party by contract, property transfer agreement, or through other means, the Army retains the ultimate responsibility for remedy integrity. Future property owners will also have responsibilities to act in accordance with the LUCs as specified in the deeds.

2.14.4. Summary of the Estimated Remedy Costs

For those alternatives whose life-cycle is indeterminate or exceeds 30 years, for the purposes of evaluating and comparing alternatives as specified in EPA's Remedial Investigation/Feasibility Study Guidance (EPA 1988), a period of 30 years is used for estimating long-term O&M costs. For the Group 1 MRAs, the life-cycle is indeterminate; therefore, long-term O&M costs were estimated over a period of 30 years. Capital and long-term O&M costs for implementing and maintaining LUCs under Alternative 2 are estimated at a total of approximately $1.3 million for the reuse areas within the Group 1 MRAs. Capital and long-term O&M costs for implementing and maintaining Long-Term Management Measures are estimated at approximately $562,000 for the reuse areas within the Group 1 MRAs. Therefore, the total estimated 30-year Net Present Value cost of the remedy is approximately $1.9 million. Long-term O&M costs are based on a 0.7 percent real interest rate for Years 1-7 (assumed duration for development and construction), and a 1.4 percent real interest rate for Years 8-30 (established reuse). A detailed, activity-based breakdown of the estimated costs associated with implementing and maintaining the remedy is provided in the Group 1 Feasibility Study (Volume 3; ESCA RP Team 2017c).

2.14.5. Expected Outcomes of Selected Remedy

The expected outcomes of the selected remedy would be protection of human health and the environment through implementation of LUCs.

If residential use, as defined in this ROD, is planned for the designated future non-residential development reuse or habitat reserve reuse portions of the Group 1 MRAs included in this ROD, the plans will be subjected to regulatory agency and Army review and approval.

2.15. Statutory Determinations

The selected remedy satisfies the requirements of Section 121 of CERCLA as follows:

- Protection of Human Health and the Environment: The selected remedy provides protection for both human health and the environment through implementation of LUCs to mitigate the risk from potentially remaining MEC.
- Compliance with Applicable or Relevant and Appropriate Requirements: The selected remedy can be implemented in a manner consistent with Federal and State guidance. While the Army does not consider California laws and regulations concerning CRUPs to be potential ARARs, the Army entered into CRUPs with the DTSC at the time the property was transferred to FORA. Although the DTSC and the EPA Region IX disagree with the Army's determination that California laws and regulations concerning CRUPs are not potential ARARs, they will agree-to-disagree on this issue since the Army executed the CRUPs and the DTSC will modify the CRUPs, as appropriate, to be consistent with the identified remedy.
- Cost Effectiveness: The selected remedy is a cost-effective solution for reducing the risks to human health and the environment. The Net Present Value of the total estimated costs for the reuse areas within the Group 1 MRAs is approximately $1.9 million (including long-term management measures costs of $562,000) for the selected remedy of Land Use Controls (Alternative 2), which is well below the estimate for Additional MEC Remediation (Alternative 3) of approximately $21.8 million (including long-term management measures costs of $562,000). In addition, costs for Alternative 3 may be higher than estimated because: (1) after additional munitions responses are completed, these areas would require re-evaluation of potential risk from MEC that may remain present; and (2) the areas are likely to continue to require additional risk mitigation measures (e.g., LUCs) to protect human health during development and long-term reuse. There are minimal costs associated with Alternative 1.
- Utilization of Permanent Solutions and Alternative Treatment (or Resource Recovery) Technologies to the Maximum Extent Practicable: The principal threats at the Group 1 MRAs have already been treated (i.e., munitions removal actions have been completed) utilizing permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable.
- Preference for Treatment as a Principal Element: The principal threats at Group 1 MRAs have already been addressed (i.e., munitions removal actions have been completed), satisfying the statutory preference for treatment as a principal element (i.e., reducing the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants as a principal element through treatment).
- Five-Year Review Requirements: Because the selected remedy may result in MEC potentially remaining within the Group 1 MRAs, a statutory review will be conducted by the Army within five years after initiation of the remedial action to ensure the remedy is, or will be, protective of human health and the environment. The purpose of a five-year review is to gather updated information, evaluate the condition of the site, and determine if the site remains safe from contamination that might be left at the site. The next five-year review will occur in 2022.

2.16. Documentation of Significant Changes from Preferred Alternative of Proposed Plan

As described in Section 2.4., the Proposed Plan for the Group 1 MRAs was released for public comment on September 6, 2017, and a public meeting was held on September 27, 2017. This Proposed Plan identified the preferred remedial alternative for the Group 1 MRAs. Comments collected over the 30-day public comment period between September 15, 2017, and October 16, 2017, did not necessitate any significant changes to the conclusions or procedures outlined in the Group 1 RI/FS and Group1 Proposed Plan.

While not a significant change, the boundary of the habitat reserve reuse area in the Parker Flats MRA Phase II was updated after the release of the Group 1 Proposed Plan. The 1.1-acre, MRS-13B Habitat Reserve reuse area is included in this ROD. The MRS-13B Habitat Reserve area was evaluated in remedial investigation and risk assessment for the Track 2 Parker Flats MRA (Army 2006). The area was not included in the resulting Track 2 Parker Flats ROD (Army 2008) due to its small size. It was intended to be included in a different decision document that would address the entire parcel. This area is incorporated into this ROD as part of Parcel E19a.2.

3. RESPONSIVENESS SUMMARY

3.1. Proposed Plan Overview

Based on the Group 1 RI/FS, dated May 4, 2017, the Army identified a preferred remedial alternative of LUCs. The preferred remedial alternative presented in the Group 1 Proposed Plan includes the following LUCs:

- Military munitions recognition and safety training (for workers who will conduct ground-disturbing or intrusive activities, such as construction workers and maintenance workers)
- Construction support by UXO-qualified personnel (for ground-disturbing or intrusive activities)
- Access management measures (applicable to the habitat reserve areas)
- Restrictions prohibiting residential use in areas designated for non-residential development reuse or for habitat reserve
- Restrictions against inconsistent uses (applicable to the habitat reserve areas)

3.2. Background on Community Involvement

Focused community involvement for the Group 1 Proposed Plan involved a notice of availability of the Proposed Plan for review, a 30-day public comment period, a public meeting, and a responsiveness summary to address comments received on the Group 1 Proposed Plan.

The Group 1 Proposed Plan notice of availability was published in the Monterey County Herald and the Salinas Californian newspapers on September 15, 2017. The 30-day public comment period began on September 15, 2017, and closed on October 16, 2017.

The public meeting was held on September 27, 2017, to present the Group 1 Proposed Plan to a broader community audience. At this meeting, representatives from the Army and regulatory agencies were present, and the public had the opportunity to submit written and oral comments about the Proposed Plan. Representatives from FORA were also present at the public meeting to answer questions on the Group 1 Proposed Plan. Copies of the comments received on the Proposed Plan and a transcript of the public comments are available at the Fort Ord Administrative Record at www.fortordcleanup.com.

The responsiveness summary responds to written comments received during the Group 1 Proposed Plan public comment period as well as oral comments expressed during the Proposed Plan public meeting. A summary of public comments submitted during the Proposed Plan public comment period and the Army's responses to the comments are provided in the following section.

3.3. Summary of Comments Received During the Public Comment Period and Department of the Army Responses

Public comments received during the Group 1 Proposed Plan public comment period and the Army's responses are summarized below.

Comments were received from the public: (1) at the public meeting held on September 27, 2017; and (2) in written comments received during the 30-day public comment period from September 15, 2017, to October 16, 2017.

Comment summaries are provided below and have been categorized based on the focus of each comment. The categories are:

A. Selected Remedy and Remedy Implementation

B. Munitions Cleanup

C. Other Comments

A1: A commenter expressed concerns with the adequacy of construction support requirements and notifications to homebuyers of deed notices, referred to by the commenter as "safety protocols", to protect future homeowners in the Parker Flats MRA Phase II future residential reuse areas.

Response: Fort Ord Reuse Authority has conducted additional evaluation and verification on the designated future residential reuse areas. The evaluation and verification concluded there was no remaining evidence of high hazard munitions, no remaining technical challenges, no remaining detection depth concerns, and no remaining documentation or quality concerns in the designated future residential reuse areas. The Army, EPA and DTSC have determined that reuse at the Seaside MRA and Parker Flats MRA Phase II, including the future residential reuse areas, can occur safely with the LUCs remedy that includes: military munitions recognition and safety training for people that will conduct ground-disturbing or intrusive activities; construction support for ground-disturbing or intrusive activities to address MEC that potentially remain in the subsurface; access management measures in areas designated for habitat reserve; restrictions prohibiting residential use in areas designated for non-residential development reuse or for habitat reserve; and restrictions against inconsistent uses (applicable to the habitat reserve areas).

The property underlying the Group 1 MRAs will be transferred from FORA to the City of Seaside, Monterey County, and Monterey Peninsula College (MPC) after EPA certifies the completion of the remedial action. To ensure LUCs are implemented and enforced, the jurisdictions (including MPC) will conduct monitoring and reporting of applicable LUCs, based on a 2008 agreement with FORA and DTSC (Administrative Record No. OE-0714A).

Several LUC implementation plans have been developed for the ESCA properties for which the selected remedy included LUCs. The plans focus on implementation, maintenance, enforcement, monitoring, and reporting of LUC remedies (e.g., military munitions recognition and safety training, construction support, and restrictions against residential reuse). Under the ESCA, FORA will implement the selected remedy for the ESCA properties. The implementation plans developed by FORA have been extensively coordinated with the local reuse community and designated property recipients, and include many resources such as: (1) decision trees for determining construction support requirements, identifying appropriate construction support processes, and responding to suspect munitions; (2) templates for construction support planning; (3) standardized forms for reporting suspect munitions discoveries, notifying responsible parties and stakeholders, and completing follow-up assessments; (4) checklists for annual inspections and annual monitoring and reporting to regulatory agencies and the Army; and (5) a munitions-related "safety guide" as a training tool for people conducting ground-disturbing or intrusive activities. To further support the military munitions recognition and safety training component of the plans, FORA is developing a publicly accessible web-based eLearning platform, which tracks attendance, provides a 20-minute training video with periodic knowledge checks, and offers a downloadable training certificate upon completion, if requested. A similar plan will be developed for the Group 1 property.

During LUC plan development, FORA conducted five in-person workshops with responsible representatives in attendance to include: (1) four jurisdictions; (2) two higher education institutions; (3) two regulatory agencies (EPA and DTSC); (4) local Army BRAC; (5) interested developers; and (6) interested citizens. The workshops were designed to provide educational awareness on plan responsibilities, processes, and procedures, solicit constructive input, and address questions. The draft and draft final plans were also provided to these stakeholders for review and comment. Lastly, the LUC implementation plan concepts were presented to the local community during four additional workshops to inform the community that the former military property will be appropriately and effectively managed, ensuring continued protection of human health and the environment following property transfer to local communities.

The Federal deeds for the Seaside MRA and Parker Flats MRA Phase II properties include requirements for providing notice of the potential for the presence of MEC to future landowners and requirements to immediately stop any ground-disturbing or intrusive activities in the area or in any adjacent areas in the event a MEC item is encountered, and not to attempt to disturb, remove or destroy the MEC, but to notify the local law enforcement agency having jurisdiction on the property so that appropriate EOD personnel can be dispatched to address such MEC. The land use restrictions and notices set forth in the Federal deeds run with the land and are binding upon all future owners and occupants of the property. Prior to transfer of a Seaside MRA or Parker Flats MRA Phase II property, property recipients will be notified by the property owner of the property restrictions. Jurisdictions, under the MOA with DTSC, will be responsible for monitoring property transfer to ensure use restrictions are maintained in future deeds for the Group 1 properties.

A2: One commenter expressed concern regarding the residual MEC risks that may remain in the Parker Flats MRA Phase II non-residential reuse property designated for transfer to MPC and the mitigation actions that may affect future construction activities, with regard to expense of LUCs implementation, possible disruption of construction activities, and potential delays during development due to potential discovery of residual munitions.

Response: The Army is committed to the goal of selecting and implementing environmental cleanup actions that support the reuse of the former Fort Ord as described in the Fort Ord Reuse Plan. As described in the Group 1 RI/FS and Proposed Plan, MEC removals in the Parker Flats MRA Phase II non-residential development parcels included subsurface MEC removal, resulting in removal of subsurface anomalies that potentially represented MEC. Reflecting the results of the MEC removals, the risk assessment and the feasibility study were developed based on the assumption that MEC may potentially remain in the subsurface. The Group 1 RI/FS was developed by FORA under the ESCA.

With regard to the concern that the expense, possible disruption of construction, and potential delays to development plans to address potential risk associated with construction activities in the area of the non-residential development area, military munitions recognition and safety training for future land users conducting ground-disturbing or intrusive activities and construction support for ground-disturbing or intrusive activities are appropriate means to address residual risks concerning ground-intrusive activities at the Parker Flats MRA Phase II. These measures are included in Alternative 2 so that appropriate safety measures are incorporated into planned construction projects. While the requirements for such measures could result in additional cost or schedule impacts to future landowners as compared to a project located outside of a former military installation, they are appropriate mitigation measures that should be taken when conducting ground-disturbing activities in areas with potential presence of MEC.

The Army acknowledges the concerns associated with potentially remaining MEC at the Parker Flats MRA Phase II during reuse. Residual risks were carefully considered during the risk assessment process

and a set of land use controls, specifically designed to address the residual risks, was selected as the remedy for the Parker Flats MRA Phase II.

A3: Comments were made regarding the designation of portions of Parker Flats MRA Phase II for future residential reuse. A commenter stated that Seaside MRA and Parker Flats MRA Phase II are examples of areas that should have been determined to be open space. In addition, comments were made regarding the description and identification of the East Garrison-Parker Flats "land swap assessment" as reported in the Fort Ord Base Reuse Plan; Assessment East Garrison – Parker Flats Land Use Modifications.

Response: The reasonably anticipated future land uses for the Group 1 MRAs were established based on input from the underlying land use jurisdictions. The designated future land uses for the Seaside MRA and Parker Flats MRA Phase II are based upon the Fort Ord Base Reuse Plan (FORA 1997). Future land use information is also included in the HMP (USACE 1997b) and modifications to the HMP provided in *Assessment, East Garrison – Parker Flats Land Use Modifications, Fort Ord, California* ("the 2002 Land Use Assessment"; Zander 2002), and *Memorandum of Understanding Concerning the Proposed East Garrison/Parker Flats Land-Use Modification* (Army 2004), as described in Section 2.9 of this ROD. Additional documents supporting the reasonably anticipated future land reuse include the following:

- Agreement Regarding Public Safety Officer Training Facilities, dated October 21, 2002;
- City of Seaside 2005 General Plan, adopted August 5, 2004; and
- Monterey County 2006 General Plan, revised to 2010 General Plan Update, adopted October 26, 2010.

The reasonably anticipated future land use for the designated residential reuse areas is consistent with these land use modification documents, as well as the general plan updates by local jurisdictions. For reference, the reasonably anticipated future land reuses and associated land use modifications were compiled in *Final Reassessment Report, Fort Ord Reuse Plan Reassessment*, dated December 14, 2012, and supporting Appendix A Final Scoping Report (accessible at www.fora.org). Final or actual land use decisions will be made by local jurisdictions and must be consistent with land use restrictions placed on the property. Jurisdictions will be the final decision-makers regarding land use and the associated aspect of development that may occur.

The 2002 Land Use Assessment describes the land use modification for the Parker Flats MRA to accommodate the MPC officer training and Emergency Vehicle Operations Center (EVOC) facilities. The modification supports the Central Coast Veterans Cemetery, the Monterey Horse Park and other development. An approximately 447-acre area was converted to Habitat Reserve and Oak Woodland Habitat Reserve. The 2002 Land Use Assessment did not result in any change to the designated land use for the Parker Flats MRA parcels that are currently described as designated for future residential reuse.

A4: Comments were made regarding the implementation of LUCs, including questions of how LUCs will be implemented, how much implementation will cost and who will pay for it, who will be in control and how they will be trained. The commenter provided an example of a transferred area of the former Fort Ord. Additionally, the commenter expressed concern with implementation of the remedy with future staff turnover at FORA and the Army.

Response: Regarding concerns related to enforcement of LUCs by jurisdictions, a RD/RA Work Plan and/or LUCIP/OMP will be prepared outlining implementation of the selected remedy. The plan will be coordinated with the jurisdictions. The property underlying the Group 1 MRAs will be transferred from

FORA to the City of Seaside, Monterey County, and MPC after EPA certifies the completion of the remedial action (see response to Comment A1). The final remedy selected for the Group 1 MRAs will be implemented by FORA, and its successor under the ESCA. However, the Army is ultimately responsible for the integrity of the remedy.

Regarding concerns related to accountability, the jurisdictions (including MPC) will be responsible for conducting annual LUC inspections and monitoring for the Group 1 MRAs and submitting annual LUC monitoring reports to FORA. FORA will monitor compliance with LUC monitoring and reporting obligations per a 2008 agreement with FORA and DTSC (Administrative Record No. OE-0714A). Annual LUC monitoring reports and annual LUC status reports cover the environmental restrictions, covenants and controls for the properties, including the military munitions recognition and safety training, construction support, access management measures, residential use restrictions, and restrictions prohibiting inconsistent uses (applicable to habitat reserve areas). The remedy will be evaluated by the Army during the five-year review process to determine whether the selected remedy continues to be protective of human health and the environment.

The ESCA and AOC contemplated the eventual sunset of FORA and made provisions for a successor in interest to perform FORA's Long-Term Obligations. The ESCA states that the successor should be able to meet the technical obligations and responsibilities required under the ESCA and the AOC. The ESCA limits the successor to Monterey County, City of Seaside, City of Marina, or a joint powers agency comprised of two or more public authorities created for the purpose of succeeding FORA's obligations, liabilities, and duties.

As described in Section 2.14.4 of this ROD, the estimated cost of implementing Alternative 2 for the Group 1 MRAs is $1.9 million. Additional information is provided in the Group 1 Feasibility Study (Volume 3; ESCA RP Team 2017c).

A5: One commenter expressed concern regarding liability associated with potential MEC that may be encountered in the Parker Flats MRA Phase II parcels designated for transfer to MPC during non-residential development and by recreational users or trespassers in the non-residential development reuse area. The commenter stated that Alternative 2 appears inadequate to address potential risk and liability that the future land owner will bear.

Response: As described in the Group 1 RI/FS and Proposed Plan, MEC removals in the Parker Flats MRA Phase II included subsurface MEC removals in the non-residential development reuse areas. The potential risk for trespassers and recreational users was assessed as "A" (lowest risk) for the non-residential development reuse areas. The planned reuse for the area designated for transfer to MPC is for development of university facilities and continued use for emergency vehicle training. The potential for MEC to become present on the surface in the future is low.

The LUC remedy will be protective of human health by requiring military munitions recognition and safety training, construction support for ground-disturbing and intrusive activities, and restricting the property from residential use in the non-residential development reuse areas (i.e., sensitive uses, as defined in this ROD). The selected LUCs are appropriate to address risks from MEC that may potentially remain at the site during reuse.

A6: Comments were made expressing that language should be included to specify that non-motorized mountain biking and non-motorized recreation (i.e., hiking, mountain biking, equestrian, trail running, dog-walking, etc.) are considered "consistent uses" and that access be provided for trail users to the "Oak Oval" area and nearby areas.

Response: With respect to land use controls, inconsistent uses are uses that are inconsistent with the HMP, for the habitat reserve portion of the Parker Flats MRA Phase II. Recreational activities described in the comment, provided the activities occur within authorized areas and/or trails, generally would not be considered inconsistent with the HMP.

As described in this ROD, access management measures, such as informational displays, fencing, and security patrols, will be implemented to discourage access by unauthorized personnel to habitat reserve areas outside of authorized trails. Access management measures are not intended to restrict recreational use of trails within the habitat reserve area. Recreational users were identified as a type of receptor anticipated in the habitat reserve areas, and were evaluated in the Group 1 Risk Assessment (Volume 2; ESCA RP Team 2017c).

B1: A comment was made expressing support for reuse of the former Fort Ord, especially areas that will be transferred to the City of Seaside, for economic redevelopment. The commenter cited the completion of the removal of MEC and other contaminants as critical to meaningful development of the City of Seaside.

Response: The comment is acknowledged.

B2: Comments were made expressing concern with use of the Parker Flats MRA Phase II for residential reuse given past use of the area for grenade, mortar, and chemical warfare training, and given the types of munitions items recovered during the clean-up process.

Response: This ROD results in the removal of the residential use restriction from the Seaside MRA and Parker Flats MRA Phase II designated future residential reuse areas, as presented in the Group 1 Proposed Plan. The decision is based on additional evaluation and verification, which confirmed that these areas were acceptable for residential reuse. The detailed evaluation and verification of the MEC remediation areas included: review of records on the types and locations of training, and associated weapons and munitions used in the area; review of the quality and effectiveness of previous removal actions; and conducting additional verification fieldwork including geophysical mapping on portions of the areas. The additional verification by FORA included geophysical mapping surveys and associated target investigation confirming intact smaller-sized munitions are not likely to remain in the areas and potential technical challenges were resolved. The evaluations and verifications concluded there was no remaining evidence of high hazard munitions, no remaining technical challenges, no remaining detection depth concerns, and no remaining documentation or quality concerns in the designated future residential reuse areas.

The additional evaluations and verifications performed in the Seaside MRA and Parker Flats MRA are documented in residential protocol implementation technical reports, and the information was incorporated into the Group 1 RI/FS (ESCA RP Team 2017c).

B3: A commenter expressed concern for the potential of items underground to shift as a result of geological movements and nearby construction, thereby causing items to move closer to the ground surface.

Response: FORA performed remedial investigation in the Seaside MRA and Parker Flats MRA Phase II that included subsurface investigation. The detection instruments used during the field work represented the best available detection technology. The Group 1 RI/FS provides a detailed evaluation of the work, including quality assurance and quality control processes and a risk assessment. Potential for migration of subsurface munitions (if present) due to erosion was considered as part of the risk assessment.

C1: A commenter asked if parts of the former Fort Ord (i.e., officers' quarters) might be used as homeless shelters.

Response: Land use decisions are made by appropriate jurisdictions and must be consistent with land use restrictions placed on the property. Jurisdictions are the decision-makers regarding land use and the associated aspects of development that may occur.

C2: Comments were made regarding examples of residential developments located on former training areas where live ordnance and chemicals had been utilized in the training.

Response: Former military training sites and ranges are currently being reused for residential development, including Benicia Arsenal in Benicia, California and former Camp Beale near Marysville, California. Each instance of residential development on former training areas is unique. At the former Fort Ord, during development of the ESCA and the AOC, the EPA and the DTSC required use of the best available (and appropriate) detection technologies and related processes to remove MEC to the point that land could be released for potential residential reuse. To satisfy these requirements, FORA developed a thorough, data-driven implementation process as part of the ESCA to support the acceptability of a parcel for residential use, referred to as the ESCA RQA Process. This process was successfully applied to the designated residential reuse areas within the Seaside MRA and Parker Flats MRA. This work is documented in the following reports:

- *Final Group 1 Residential Protocol Implementation Technical Report, Seaside Munitions Response Area, Former Fort Ord, Monterey County, California* (ESCA RP Team 2017a);
- *Final Group 1 Supplemental Residential Protocol Implementation Technical Report, Seaside Munitions Response Area, Former Fort Ord, Monterey County, California* (ESCA RP Team 2017d); and
- *Final Residential Protocol Implementation Technical Report, Parker Flats Munitions Response Area, Former Fort Ord, Monterey County, California* (ESCA RP Team 2017b).

C3: A comment was made requesting the entirety of the Fort Ord Community Advisory Group (FOCAG) record be made part of FOCAG's response to this proposed remedial action.

Response: Responses to Comments previously provided on Group 1 MRA documents were addressed, and responses to the comments were included in final versions of the documents, such as the Final Group 1 RI/FS (ESCA RP Team 2017c). The RI/FS and other supporting documents are available at the Fort Ord Administrative Record.

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TABLES

Table 1. Summary of Munitions Response Site (MRS) Investigations
Record of Decision, Group 1 Munitions Response Areas,
Former Fort Ord, California

MRS Site Number	Site Acreage	Site Name or Location	Past Use	Site Investigation Status *
Seaside MRA				
MRS-15 SEA 01	183	Southwest-central portion of Historical Impact Area	Pre-WWII training; training maneuvers; practice hand grenade training; non-firing target range training (Old Range 22 and Range 23M); and small arms ammunition training (Ranges 21, 22, and 23)	Subsurface MEC removal completed across site, including soil scraping and sifting in the majority of SCAs and in isolated areas.
MRS-15 SEA 02	86	West-central portion of Historical Impact Area	Pre-WWII training in southern portion of MRS; and small arms ammunition training (Ranges 19, 20, and 59)	Subsurface MEC removal completed across site, including soil scraping in the majority of SCAs and in isolated areas.
MRS-15 SEA 03	50	Northwest-central portion of Historical Impact Area	Small arms ammunition training (Range 18)	Subsurface MEC removal completed across site, including soil scraping in the majority of SCAs and in isolated areas.
MRS-15 SEA 04	79	North-western portion of Historical Impact Area	Pre-WWII training; training maneuvers; practice hand grenade training; small arms ammunition training (Ranges 18 and 46); mortar and anti-tank training (Range 48); and mine and booby trap training (Range 50)	Subsurface MEC removal completed across site, including soil scraping and sifting in the majority of SCAs and in isolated areas.
Areas Outside of MRS Boundaries	25	Areas west of MRS-15 SEA 01 and MRS-15 SEA 02	Former alignment of General Jim Moore Boulevard. No evidence of training maneuvers.	Subsurface MEC removal completed on hillside west of MRS-15 SEA 01 boundaries. Field verification site walk with subsurface MEC removal completed in two portions of area west of MRS-15 SEA 01.
Parker Flats MRA Phase II				
MRS-04A	6	CBR Training Area	Training maneuvers; CBR training	Subsurface MEC removal completed across site.

Table 1. Summary of Munitions Response Site (MRS) Investigations
Record of Decision, Group 1 Munitions Response Areas,
Former Fort Ord, California

MRS Site Number	Site Acreage	Site Name or Location	Past Use	Site Investigation Status *
MRS-04A EXP	3	CBR Training Area Expansion to the north and east	Training maneuvers; CBR training	Subsurface MEC removal and field verification site walk with subsurface MEC removal completed across site.
MRS-15 MOCO.2	32	North-central portion of Historical Impact Area	Training maneuvers; practice hand grenade training; projectile training (training occurred over a short period of time or area was not the intended target area)	Subsurface MEC removal completed across site.
MRS-27A	24	Training Site 1	Training maneuvers; practice hand grenade training	Subsurface MEC removal completed in areas designated for non-residential development reuse and in unpaved roads, trails, and 5-foot buffer along sides of trails, in areas designated for habitat reserve. Instrument-aided surface and near-surface MEC removal in remaining areas designated for habitat reserve.
MRS-27B	49	Training Site 2	Training maneuvers; practice hand grenade training	Subsurface MEC removal completed in areas designated for non-residential development reuse and in unpaved roads, trails, and 5-foot buffer along sides of trails, in areas designated for habitat reserve. Instrument-aided surface and near-surface MEC removal in remaining areas designated for habitat reserve.
MRS-27C	17	Training Site 3	Training maneuvers; practice hand grenade training	Subsurface MEC removal completed in unpaved roads, trails, and 5-foot buffer along sides of trails. Instrument-aided surface and near-surface MEC removal in remaining areas.

Table 1. Summary of Munitions Response Site (MRS) Investigations
Record of Decision, Group 1 Munitions Response Areas,
Former Fort Ord, California

MRS Site Number	Site Acreage	Site Name or Location	Past Use	Site Investigation Status *
MRS-44 EDC	48**	EDC Area abutting north-central portion of Historical Impact Area	Training maneuvers; projectile training; mortar training in northeastern portion of MRS	Subsurface MEC removal completed across site.
MRS-44 PBC	16	PBC Area abutting north-central portion of Historical Impact Area	Training maneuvers; practice hand grenade training; projectile training (training occurred over a short period of time or area was not the intended target area)	Subsurface MEC removal completed across site.
MRS-13B	1**	Practice mortar range	Practice mortar training	Subsurface MEC removal completed.
Areas Outside of MRS Boundaries	279	Northern and southern portions of Parker Flats MRA Phase II outside of MRS boundaries	Training maneuvers, practice hand grenade training, and mortar training using practice mortars and inert training mortars in the northern portion of the MRA. Training maneuvers, practice hand grenade training, mortar training, and projectile training in the southern portion of the MRA.	Subsurface MEC removal completed across designated future residential reuse areas; non-residential development reuse areas; and in unpaved roads, trails, and 5-ft buffer area along sides of the trails, within areas designated for habitat reserve. Instrument-aided surface and near-surface MEC removal in remaining areas designated for habitat reserve.

Acronyms
CBR = chemical, biological, and radiological
EDC = Economic Development Conveyance
MEC = munitions and explosives of concern
MRA = Munitions Response Area
MRS = munitions response site
PBC = Public Benefit Conveyance
SCA = Special Case Area
WWII = World War II

Footnotes
* All identified MEC were removed during MEC removal actions.
** Acreage stated is the portion of the MRS contained within the Parker Flats MRA Phase II.

Table 2. Summary of Transfer Parcels
Record of Decision, Group 1 Munitions Response Areas, Former Fort Ord, California

Transfer Parcel No.	Approx. Acreage	Planned Reuse *
Seaside MRA		
E24	118	Residential development
	81	Non-residential development
E34	61	Residential development
	35	Non-residential development
E23.1	40	Residential development
	10	Non-residential development
E23.2	57	Residential development
	22	Non-residential development
Parker Flats MRA Phase II		
E18.1.1**	8	Residential development
	29	Non-residential development
E18.1.2**	1	Residential development
	13	Non-residential development
E18.1.3	40	Residential development
E18.4	2	Residential development
E19a.1**	65	Residential development

Table 2. Summary of Transfer Parcels
Record of Decision, Group 1 Munitions Response Areas,
Former Fort Ord, California

Transfer Parcel No.	Approx. Acreage	Planned Reuse *
E19a.2	72	Habitat reserve
E19a.3**	69	Non-residential development
E19a.4**	95	Habitat reserve
E20c.2	30	Residential development
	3	Non-residential development
E21b.3	32	Non-residential development
L20.18	5	Non-residential development
L23.2	11	Non-residential development

Footnotes

* Planned use information obtained from the *FORA Fort Ord Reuse Plan* (FORA 1997), *Installation-Wide Multispecies Habitat Management Plan for Former Fort Ord, California* (HMP; USACE 1997b) and modifications to the HMP provided in *Assessment, East Garrison – Parker Flats Land Use Modifications, Fort Ord, California* (Zander 2002), and *Memorandum of Understanding Concerning the Proposed East Garrison/Parker Flats Land-Use Modification* (Army 2004).

** Acreage stated is the portion of the transfer parcel contained within the Parker Flats MRA Phase II.

Table 3. Summary of Remedial Alternatives Evaluation and Comparison for Seaside Munitions Response Area
Record of Decision, Group 1 Munitions Response Areas, Former Fort Ord, California

Remedial Alternative	EPA's 9 CERCLA EVALUATION CRITERIA								
	Threshold Criteria		Balancing Criteria					Modifying Criteria	
	Overall Protectiveness of Human Health and the Environment	Compliance with ARARs	Short-Term Effectiveness	Long-Term Effectiveness & Permanence	Reduction of Toxicity, Mobility, or Volume Through Treatment[1]	Implementability	Cost[2]	State Acceptance	Community Acceptance
Alternative 1 - No Further Action	Not protective; does not mitigate potentially remaining MEC risks to intrusive workers	No ARARs identified for this alternative	Not effective in the short-term; no MEC risk mitigation	Not effective in the long-term; no MEC risk mitigation	No reduction in volume because no further MEC removals would be conducted	Not administratively feasible	Minimal	Not acceptable	Not acceptable
Alternative 2 - Land Use Controls	Protective to construction and maintenance workers (intrusive workers); mitigates risks to future residents	No ARARs identified for this alternative	Effective in the short-term; required training and construction support would mitigate risks to construction and maintenance workers (intrusive workers)	Required training and construction support would mitigate risks to construction and maintenance workers (intrusive workers) until evaluation determines LUCs no longer necessary	No reduction in volume because no further MEC removals would be conducted	Technically and administratively feasible to implement	$542,000	Acceptable as the preferred alternative	Acceptable to some community members
Alternative 3 - Additional MEC Remediation	May be protective of human health and the environment	Implementation would require compliance with potential ARARs identified in Appendix A of Group 1 RI/FS Volume 3	May be effective in the short-term, although additional mitigation measures (such as land use controls) may be required	May or may not be effective in the long-term; additional risk mitigation may be needed after additional MEC remediation	May result in MEC reduction if additional MEC is discovered and removed during remediation	Technically and administratively feasible to implement	$8,310,000	Not selected	Acceptable to some community members

Acronyms
ARARs = applicable or relevant and appropriate requirements
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
EPA = U.S. Environmental Protection Agency
LUC = Land Use Controls
MEC = munitions and explosives of concern
MRA = Munitions Response Area
RI/FS = Remedial Investigation/Feasibility Study

Footnotes
[1] = Completed MEC removal actions already provide for reduction of volume.
[2] = Costs do not include long-term management costs for each alternative.

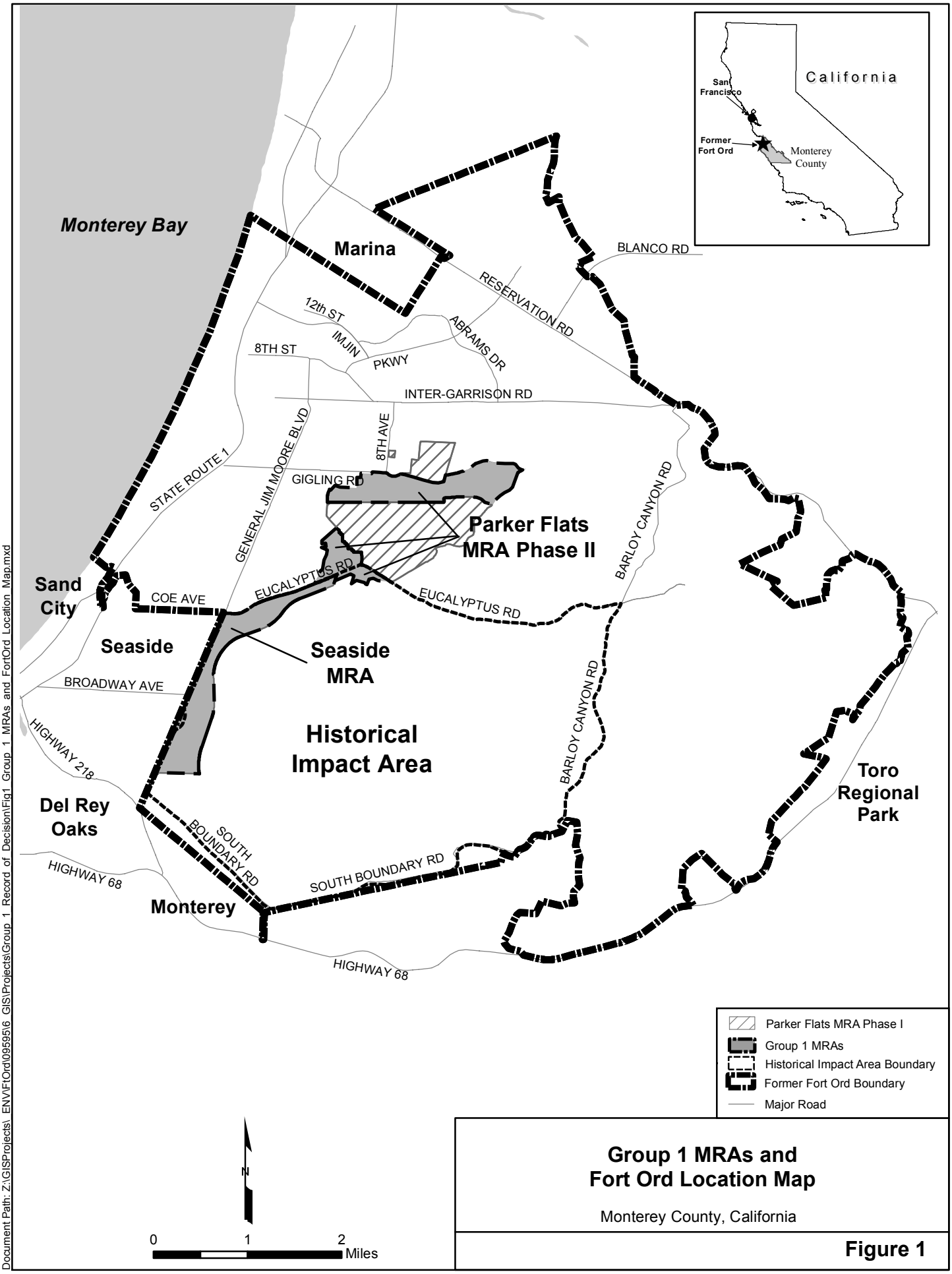
Table 4. Summary of Remedial Alternatives Evaluation and Comparison for Parker Flats Munitions Response Area Phase II
Record of Decision, Group 1 Munitions Response Areas, Former Fort Ord, California

Remedial Alternative	EPA's 9 CERCLA EVALUATION CRITERIA								
	Threshold Criteria		Balancing Criteria					Modifying Criteria	
	Overall Protectiveness of Human Health and the Environment	Compliance with ARARs	Short-Term Effectiveness	Long-Term Effectiveness & Permanence	Reduction of Toxicity, Mobility, or Volume Through Treatment[1]	Implementability	Cost[2]	State Acceptance	Community Acceptance
Alternative 1 - No Further Action	Not protective; does not mitigate potentially remaining MEC risks to intrusive workers	No ARARs identified for this alternative	Not effective in the short-term; no MEC risk mitigation	Not effective in the long-term; no MEC risk mitigation	No reduction in volume because no further MEC removals would be conducted	Not administratively feasible	Minimal	Not acceptable	Not acceptable
Alternative 2 - Land Use Controls	Protective to construction and maintenance workers (intrusive workers); mitigates risks to future residents	No ARARs identified for this alternative	Effective in the short-term; required training and construction support would mitigate risks to construction and maintenance workers (intrusive workers)	Required training and construction support would mitigate risks to construction and maintenance workers (intrusive workers) until evaluation determines LUCs no longer necessary	No reduction in volume because no further MEC removals would be conducted	Technically and administratively feasible to implement	$775,000	Acceptable as the preferred alternative	Acceptable to some community members
Alternative 3 - Additional MEC Remediation	May be protective of human health and the environment	Implementation would require compliance with potential ARARs identified in Appendix A of Group 1 RI/FS Volume 3	May be effective in the short-term, although additional mitigation measures (such as land use controls) may be required	May or may not be effective in the long-term; additional risk mitigation may be needed after additional MEC remediation	May result in MEC reduction if additional MEC is discovered and removed during remediation	Technically and administratively feasible to implement	$13,500,000	Not selected	Acceptable to some community members

Acronyms
ARARs = applicable or relevant and appropriate requirements
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
EPA = U.S. Environmental Protection Agency
LUC = Land Use Controls
MEC = munitions and explosives of concern
MRA = Munitions Response Area
RI/FS = Remedial Investigation/Feasibility Study

Footnotes
[1] = Completed MEC removal actions already provide for reduction of volume.
[2] = Costs do not include long-term management costs for each alternative.

FIGURES



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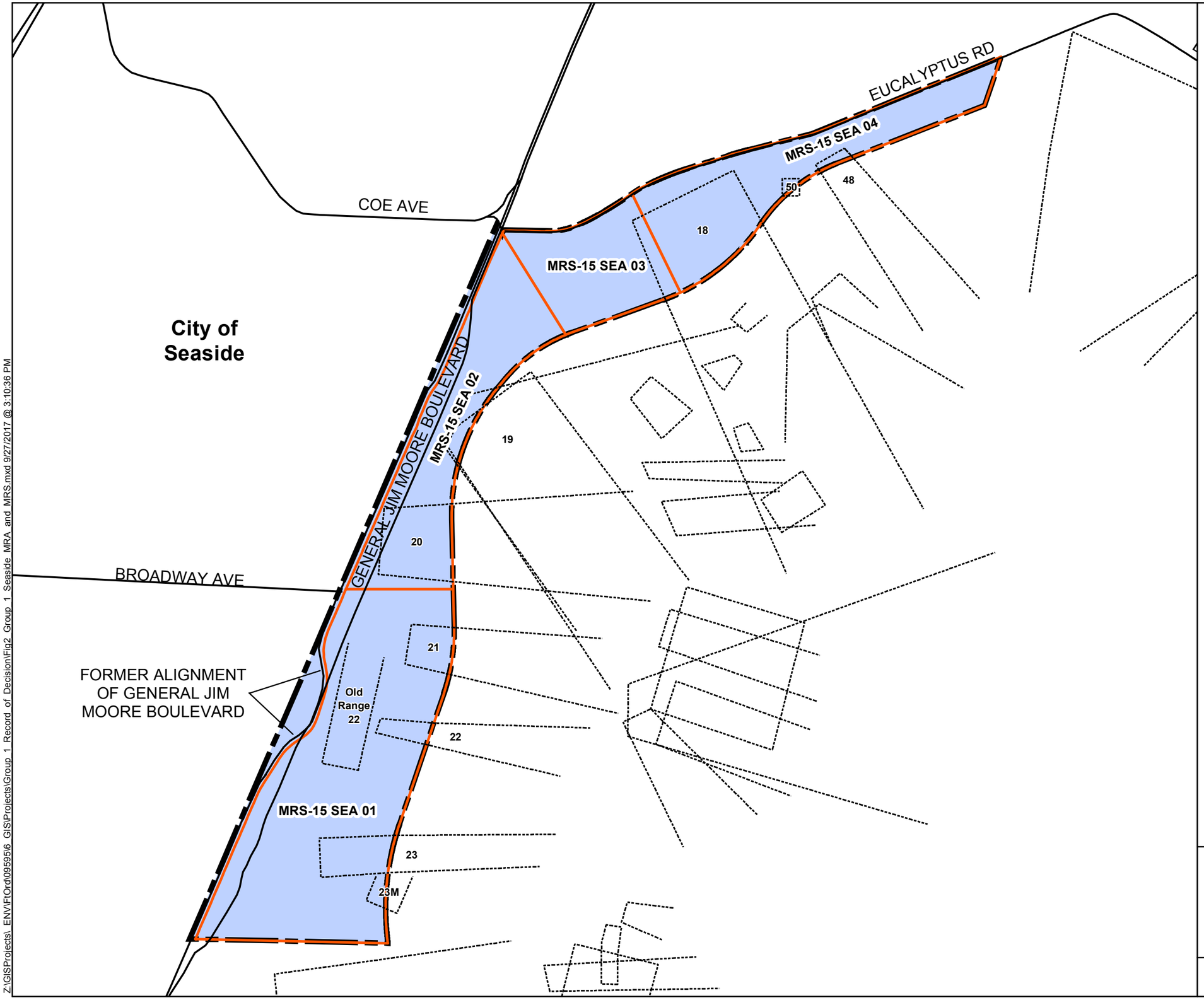
Group 1 MRAs and Fort Ord Location Map

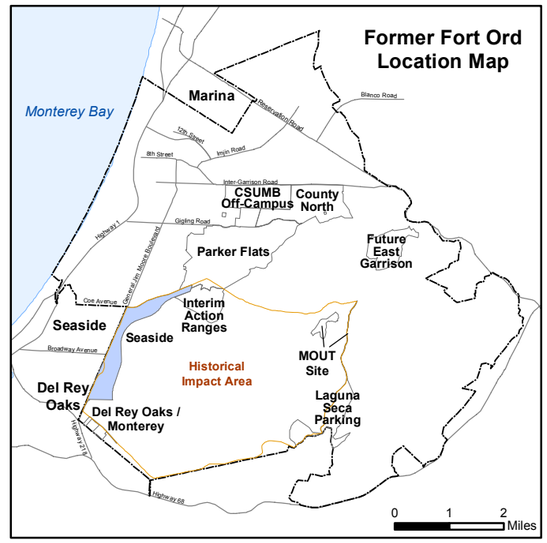
Monterey County, California

Figure 1



Legend

- Munitions Response Area
- Seaside MRA
- Munitions Response Site
- Firing Range
- Major Road



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Seaside Munitions Response Area and Munitions Response Sites

Monterey County, California

Figure 2

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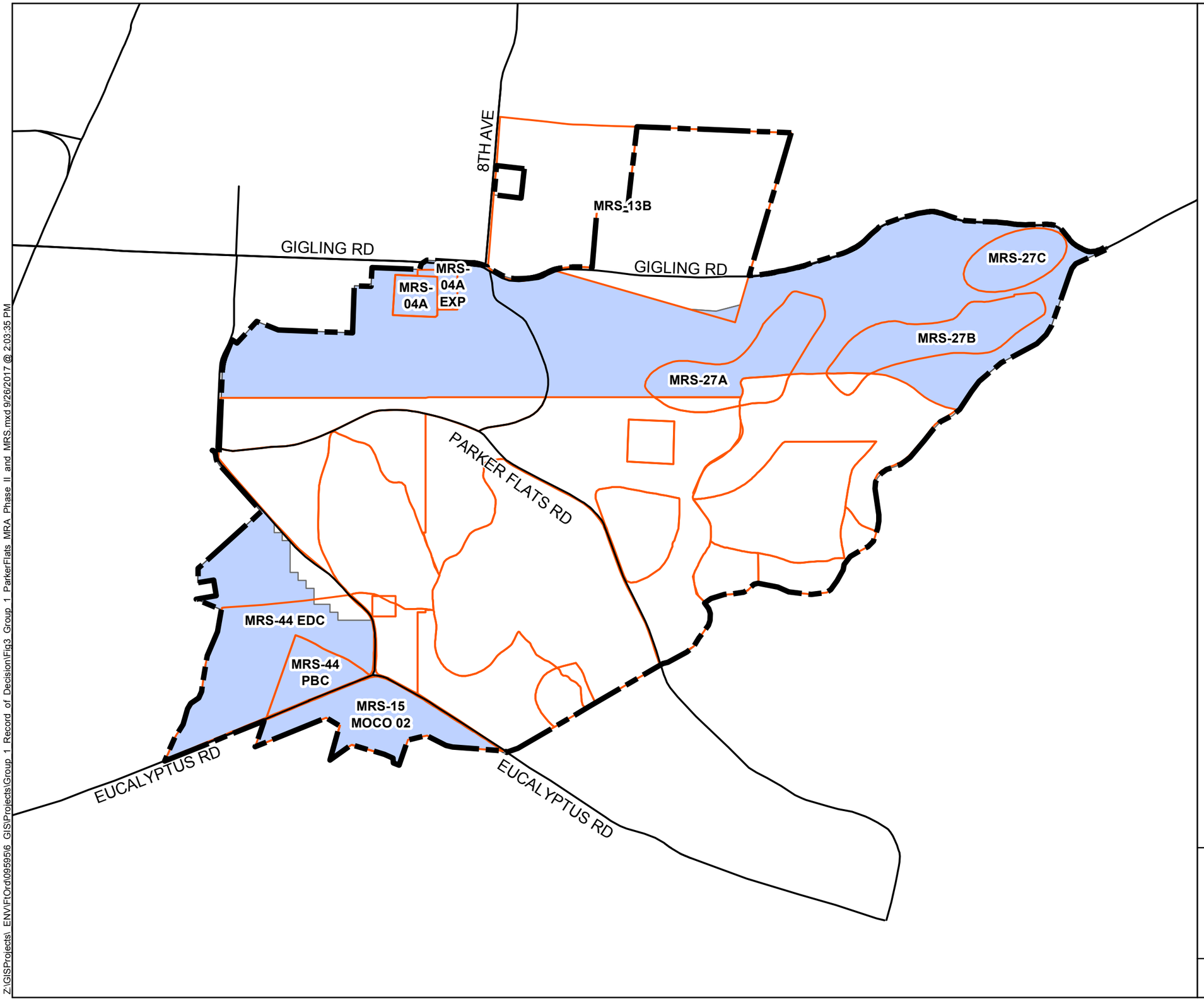
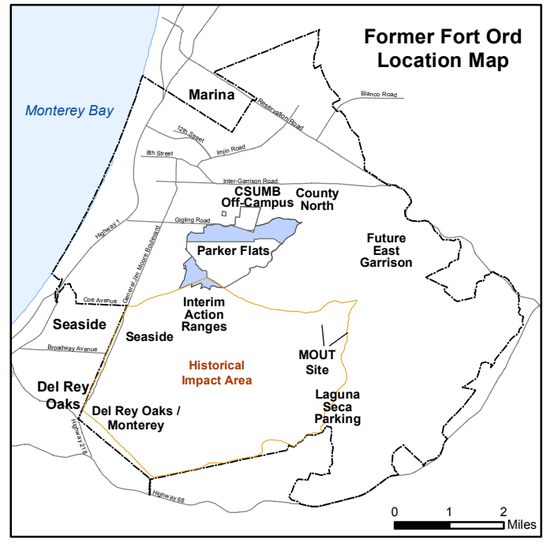


Legend

- Major Road
- Phase II Munitions Response Area
- Munitions Response Site
- Parker Flats MRA



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Parker Flats Munitions Response Area
Phase II and Munitions Response Sites

Monterey County, California

Figure 3

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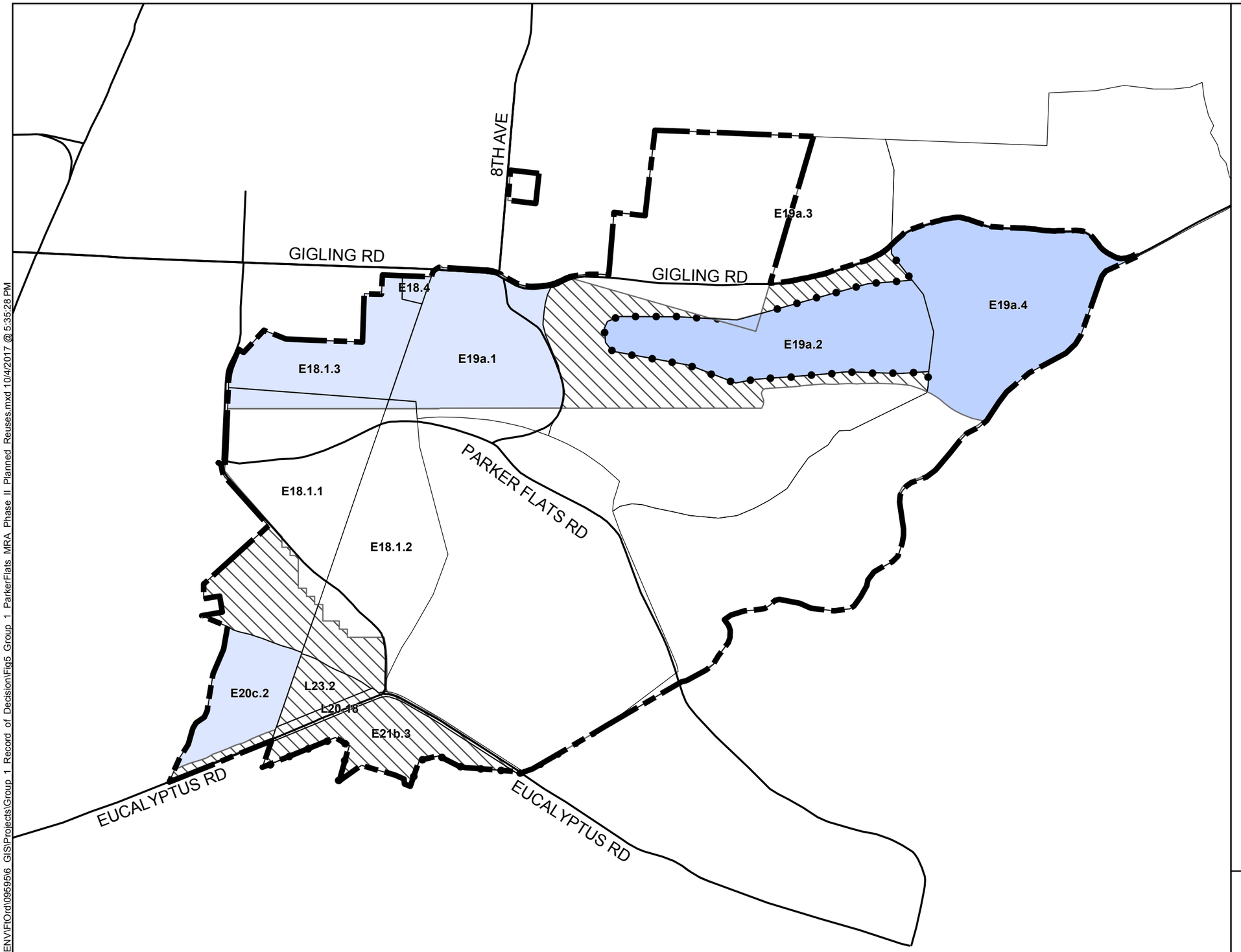


Legend

Phase II Habitat Reserve Reuse Area
(area subject to Land Use Controls including munitions recognition and safety training, construction support, access management measures, residential use restriction, and restrictions prohibiting inconsistent use)

Phase II Residential Reuse Area
(area subject to Land Use Controls including munitions recognition and safety training, and construction support)

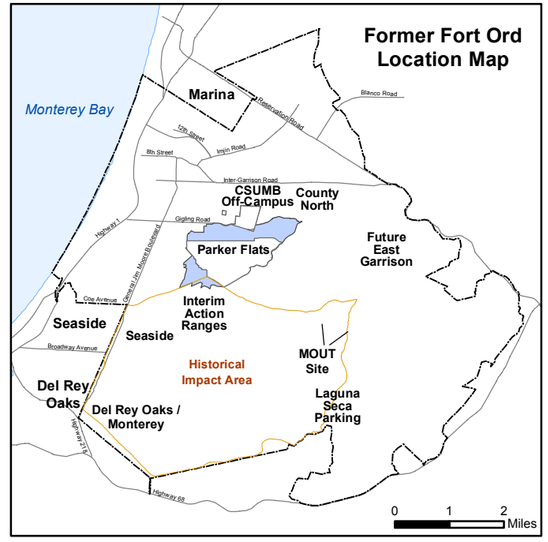
Phase II Non-Residential Development Reuse Area
(area subject to Land Use Controls including munitions recognition and safety training, construction support, and residential use restriction)

Parker Flats MRA

Borderland Interface

Major Road

E19a.2 — Phase II USACE Parcel



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Parker Flats Munitions Response Area Phase II Planned Reuses

Monterey County, California

Figure 4

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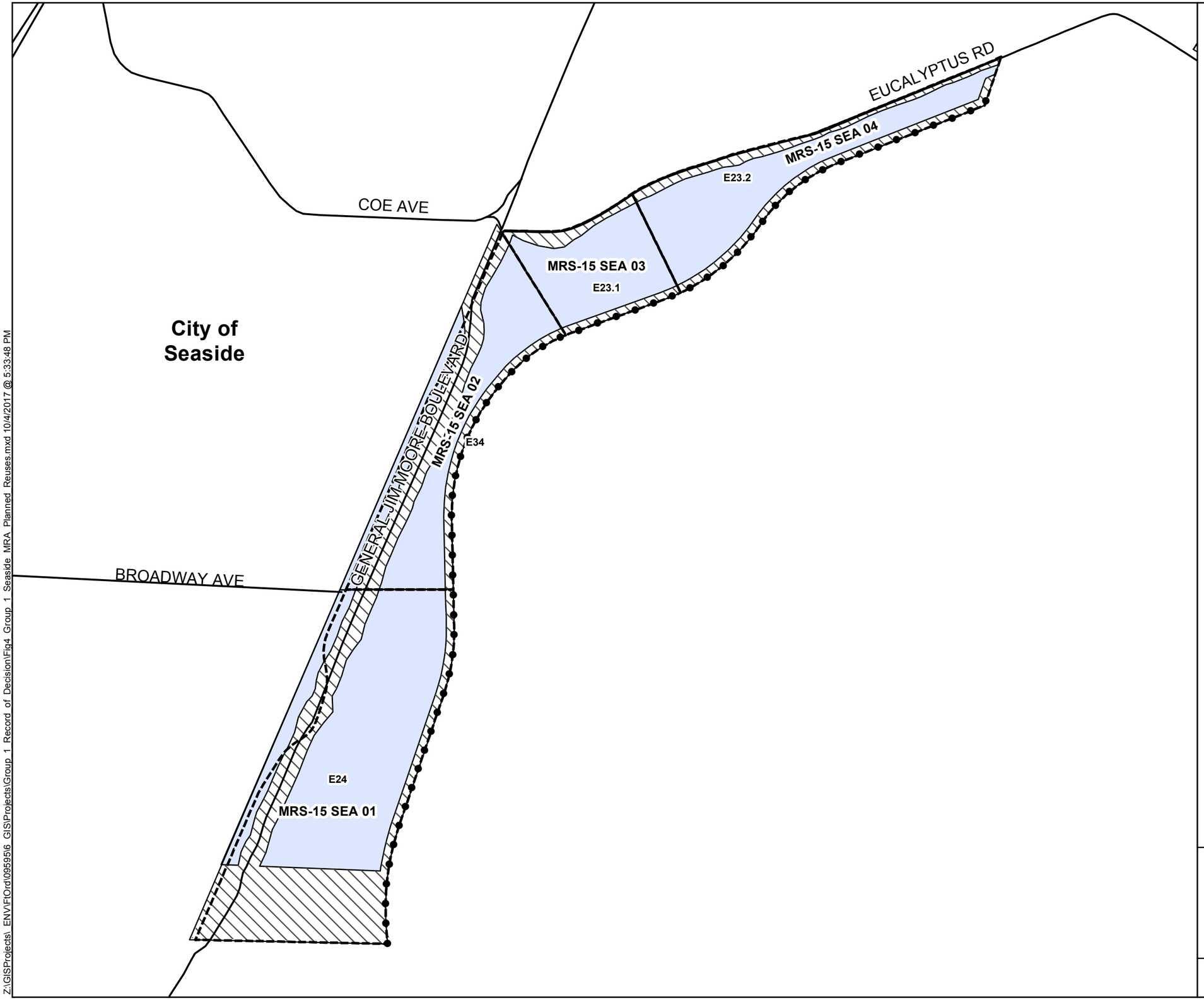
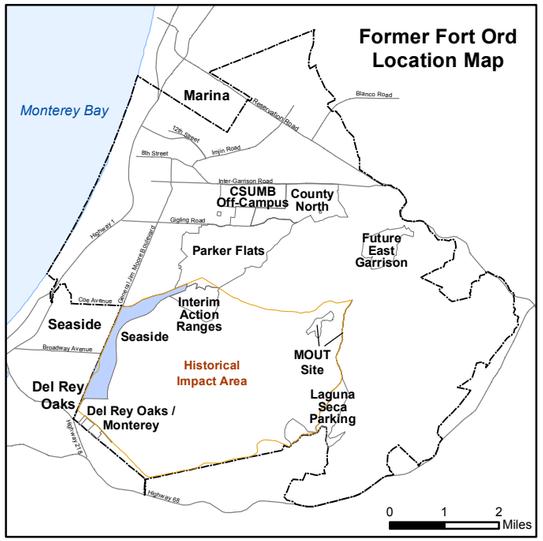
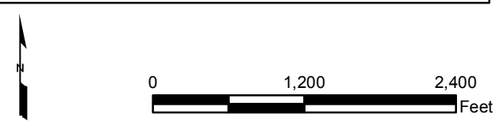


Legend

- Munitions Response Site
- Residential Reuse Area (area subject to Land Use Controls including munitions recognition and safety training, and construction support)
- Non-Residential Development Reuse Area (area subject to Land Use Controls including munitions recognition and safety training, construction support, and residential use restriction)
- E11b.8 — USACE Parcel
- Borderland Interface
- Major Road





Seaside Munitions Response Area Planned Reuses

Monterey County, California

Figure 5

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APPENDIX A

GLOSSARY OF MILITARY MUNITIONS RESPONSE PROGRAM TERMS

APPENDIX A

Glossary of Military Munitions Response Program Terms

Administrative Record – A compilation of all documents relied upon to select a remedial action pertaining to the investigation and cleanup of the former Fort Ord. *Source:* (1).

After Action Report (AAR) – A report presenting the results of munitions and explosives of concern (MEC) investigation, sampling and/or removal actions conducted at a site pertaining to the investigation and cleanup of the former Fort Ord. *Source:* (1).

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, otherwise known as Superfund) – 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. *Source:* (1).

Construction Support – Assistance provided by the Department of Defense (DOD), explosive ordnance disposal (EOD) or unexploded ordnance (UXO)-qualified personnel and/or by personnel trained and qualified for operations involving chemical agents (CA), regardless of configuration, during intrusive construction activities on property known or suspected to contain UXO, other munitions that may have experienced abnormal environments (e.g., discarded military munitions [DMM]), munitions constituents in high enough concentrations to pose an explosive hazard, or CA, regardless of configuration, to ensure the safety of personnel or resources from any potential explosive or CA hazards. *Source:* (3).

Covenant to Restrict Use of Property (CRUP) – A covenant recorded at the county recorder's office that sets forth protective provisions, covenants, and conditions subject to which a property shall be improved, held, used, occupied, leased, sold, hypothecated, encumbered, and/or conveyed. *Source:* (7) and (8).

Discarded Military Munitions (DMM) – Military munitions that have been abandoned without proper disposal or removed from storage in a military magazine or other storage area for the purpose of disposal. The term does not include unexploded ordnance (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)).

For the purposes of the basewide Military Munitions Response Program (MMRP) being conducted at the former Fort Ord, DMM does not include small arms ammunition.

Engineering Control (EC) – A variety of engineered remedies to contain and/or reduce contamination, and/or physical barriers intended to limit access to property. Some examples of ECs include fences, signs, guards, landfill caps, soil covers, provision of potable water, slurry walls, sheet pile (vertical caps), pumping and treatment of groundwater, monitoring wells, and vapor extraction systems. *Source:* (5).

Expended – The state of munitions debris (MD) in which the main charge has been expended leaving the inert carrier. *Source:* (1).

Feasibility Study (FS) – An evaluation of potential remedial technologies and treatment options that can be used to clean up a site. *Source* (1).

Historical Impact Area – The historical impact area consists of approximately 8,000 acres in the southwestern portion of former Fort Ord, bordered by Eucalyptus Road to the north, Barloy Canyon

Road to the east, South Boundary Road to the south, and North-South Road (renamed General Jim Moore Boulevard) to the west. *Source:* (1).

Institutional Control (IC) – (a) Non-engineered instruments such as administrative and/or legal controls that minimize the potential for human exposure to contamination by limiting land or resource use; (b) are generally to be used in conjunction with, rather than in lieu of, engineering measures such as waste treatment or containment; (c) can be used during all stages of the cleanup process to accomplish various cleanup-related objectives; and (d) should be "layered" (i.e., use multiple ICs) or implemented in a series to provide overlapping assurances of protection from contamination. *Source:* (6).

Land Use Controls (LUCs) – Physical, legal, or administrative mechanisms that restrict the use of, or limit access to, real property, to manage risks to human health and the environment. Physical mechanisms encompass a variety of engineered remedies to contain or reduce contamination, or physical barriers to limit access to real property, such as fences or signs. *Source:* (3).

Magnetometer – An instrument used to detect ferromagnetic (iron-containing) objects. Total field magnetometers measuring the strength of the earth's natural magnetic field at the magnetic sensor location. Gradient magnetometers, sensitive to smaller near-surface metal objects, use two sensors to measure the difference in magnetic field strength between the two sensor locations. Vertical or horizontal gradients can be measured. *Source:* (4).

Military Munitions – Military munitions means 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 Department of Defense (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 (MMRP) – Department of Defense (DOD)-established program to manage the environmental, health and safety issues presented by munitions and explosives of concern (MEC). *Source:* (1).

Mortar – Mortars typically range from approximately 1 inch to 11 inches in diameter or larger, and can be filled with explosives, toxic chemicals, white phosphorus or illumination flares. Mortars generally have thinner metal casing than projectiles but use the same types of fuzing and stabilization. *Source:* (2).

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

Munitions Debris (MD) – Remnants of munitions (e.g., fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal. *Source* (3).

Munitions and Explosives of Concern (MEC) – Distinguishes specific categories of military munitions that may pose unique explosives safety risks, such as: (A) unexploded ordnance (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., Trinitrotoluene [TNT], Cyclotrimethylene trinitramine [RDX]), as defined in 10 U.S.C. 2710(e)(3), present in high enough concentrations to pose an explosive hazard. (32 CFR 179.3).

For the purposes of the basewide Military Munitions Response Program (MMRP) being conducted for the former Fort Ord, MEC does not include small arms ammunition.

Munitions Response Area (MRA) – Any area on a defense site that is known or suspected to contain unexploded ordnance (UXO), discarded military munitions (DMM), or munitions constituents (MC). Examples are former ranges and munitions burial areas. A MRA comprises of one or more munitions response sites (MRSs). (32 CFR 179.3).

Munitions Response Site (MRS) – A discrete location within a Munitions Response Area (MRA) that is known to require a munitions response. (32 CFR 179.3).

No Further Action – Determination following a remedial investigation or action that a site does not pose a significant risk and so requires no further activity under Comprehensive Environmental Response, Compensation, and Liability Act **(**CERCLA). *Source:* (1).

Projectile – An object projected by an applied force and continuing in motion by its own inertia, as a bullet, bomb, shell, or grenade. Also applied to rockets and to guided missiles. *Source:* (2).

Proposed Plan – A plan that identifies the preferred alternative for a site cleanup, and is made available to the public for comment. *Source:* (1).

Record of Decision (ROD) – A 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. *Source:* (1).

Remedial Investigation (RI) – The RI is intended to "adequately characterize the site for the purpose of developing and evaluating an effective remedial alternative" (National Contingency Plan, 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. *Source:* (1).

Small Arms Ammunition – Ammunition, without projectiles that contain explosives (other than tracers), that is .50 caliber or smaller, or for shotguns. *Source* (3).

Superfund – See Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) above.

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

For the purposes of the basewide Military Munitions Response Program (MMRP) being conducted for the former Fort Ord, UXO does not include small arms ammunition.

UXO-Qualified Personnel – Personnel who have performed successfully in military explosives ordnance disposal (EOD) positions, or are qualified to perform in the following Department of Labor, Service Contract Act, Directory of Occupations, contractor positions: Unexploded Ordnance (UXO) Technician II, UXO Technician III, UXO Safety Officer, UXO Quality Control Specialist or Senior UXO Supervisor. *Source:* (3)

Sources:

(1) Non-standard definition developed to describe Fort Ord-specific items, conditions, procedures, principles, etc. as they apply to issues related to the munitions and explosives of concern (MEC) cleanup.

(2) U.S. Department of Defense Environment, Safety and Occupational Health Network and Information Exchange. 1996. Unexploded Ordnance (UXO): An Overview. October.

(3) U.S. Department of Defense Manual Number 6055.09, Volume 8, SUBJECT: DoD Ammunition and Explosives Safety Standards: Glossary, Incorporating Change 2. January 24, 2018.

(4) Survey of Munitions Response Technologies, June 2006. ITRC with ESTCP (Environmental Security and Technology Certification Program) and SERDP (Strategic Environmental Research and Development Program).

(5) Compendium of Department of Defense Acronyms, Terms, and Definitions. The Interstate Technology and Regulatory Council (ITRC) Work Group (Unexploded Ordnance Work Team), December 2000.

(6) Institutional Controls: A Site Managers' Guide to Identifying, Evaluating, and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups. US EPA Office of Solid Waste and Emergency Responses (OSWER) 9355.0-74FS-P, EPA 540-F-00-005. September, 2000.

(7) Covenant to Restrict Use of Property, Environmental Restriction, City of Seaside – Munitions and Explosives of Concern, Fort Ord Reuse Authority (FORA) Early Transfer Parcels. May 8, 2009.

(8) Covenant to Restrict Use of Property, Environmental Restriction, County of Monterey – Munitions and Explosives of Concern, Fort Ord Reuse Authority (FORA) Early Transfer Parcels. May 8, 2009.