PROPOSED PLAN for the Former Waikane Training Area Southern Impact Region Munitions Response Site Military Munitions Response Program

U.S. Army Corps of Engineers – Honolulu District August 2014

CONTENTS

PUBLIC MEETING:
Wednesday, August 20, 2014
7:00 pm – 9:00 pm

LOCATION:
Waiahole Elementary School Cafeteria
48-215 Waiahole Valley Road
Waiahole, Hawaii

PUBLIC COMMENT PERIOD:
August 20, 2014 – September 22, 2014

FOR MORE INFORMATION VISIT:
U.S. Army Corps of Engineers – Honolulu District

www.poh.usace.army.mil/Missions/Environmental/FUDS/Wai

1.0 INTRODUCTION

This **Proposed Plan*** is presented by the U.S. Army Corps of Engineers (USACE)† to facilitate public involvement to review and comment in the remedy selection process for the former Waikane Training Area (WTA) - a **Formerly Used Defense Site (FUDS)** located in the Waikane Valley in the District of Koolaupoko on the windward side of the island of Oahu, Hawaii (Figure 1). USACE is the lead agency for investigating, reporting, making decisions, and taking remedial actions at the former WTA. This Proposed Plan presents preliminary recommendations concerning how to best address **munitions and explosives of concern (MEC)** at this site. Included in this Proposed Plan are the various alternatives that were evaluated along with the preferred alternative recommended by USACE.

USACE requests comments from the public on this Proposed Plan. USACE may consult with the State of Hawaii, Department of Health (HDOH) and landowners to modify any of the alternatives, including the preferred alternative, based on public comments. After public comments have been considered, the **Decision Documents** will present the final decision for the former WTA. A summary describing how public comments were addressed will be included in the Decision Document.

In 2011 and 2014**, USACE conducted field work to support a **Remedial Investigation (RI)** at the former WTA in Waikane Valley to determine the nature and extent of MEC and **munitions constituents (MC)** contamination in order to adequately characterize the area for the purpose of developing and evaluating effective remedial alternatives. The former WTA is divided into three **Munitions Response Sites (MRSs).** These MRSs are the Southeastern Region MRS, Southern Impact Region MRS, and Western/Mountainous Region MRS.

* The **bolded** terms found throughout this Proposed Plan are defined in the Glossary found at the back of this document.
† A list of acronyms and abbreviations used in this document is presented following the Glossary at the back of this document.
**Additional MEC investigation was conducted within the Southern Impact Region MRS in areas where anticipated future land use included intrusive activities (June 2014).

The Preferred Alternative for the Southern Impact Region MRS is Land Use Controls which includes an Educational Awareness Program.

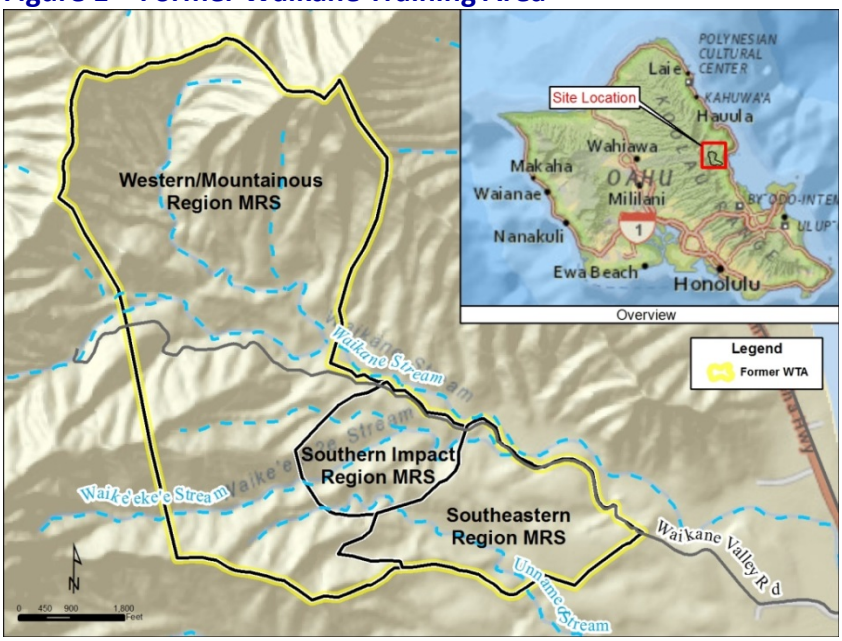
This Proposed Plan addresses the Southern Impact Region MRS. The Southeastern Region MRS and the Western/Mountainous Region MRS are addressed under a separate Proposed Plan document (ZAPATA, 2013b). The MRS boundaries are based on MEC hazards and land use.

Due to potentially complete MEC exposure pathways, the RI report recommended a **Feasibility Study (FS)** be performed for all three identified MRSs (ZAPATA, 2013a). The purpose of the FS is to provide the project decision makers with the necessary data to develop, screen and evaluate a range of potential remedial alternatives, and select a remedy to manage the MEC hazard risks to human health and the environment.

The former Waikane Training Area includes three sites:

- **Southeastern Region MRS**
- **Southern Impact Region MRS**
- **Western/Mountainous Region MRS**

Figure 1 – Former Waikane Training Area



Information Repository/Administrative Record is located at:

Kaneohe Public Library
45-829 Kamehameha Highway
Kaneohe, Hawaii 96744
Telephone: (808) 233-5676

This Proposed Plan highlights key information contained in the RI Report and the FS Report. Both the RI and FS Reports are part of the **Administrative Record** and the reader should refer to the Administrative Record for more information regarding the preferred alternatives.

This Proposed Plan is part of United State Army Corps of Engineers (USACE) Community Relations Program. The Proposed Plan (PP) is a requirement of Section 117(a) of the **Comprehensive Environmental Response, Compensation, and**

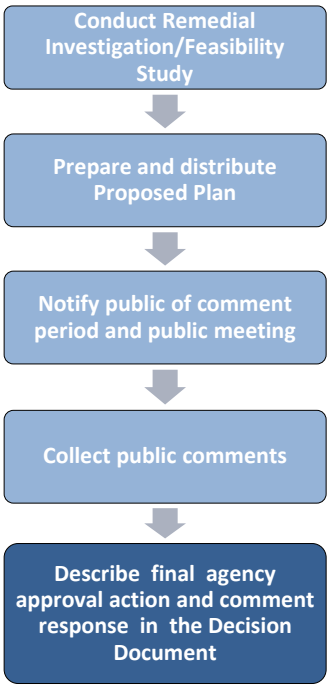
Liability Act (CERCLA), and 300.430(f)(2) of the National Contingency Plan (NCP) and follows the requirements from Engineer Regulation 200-3-1, FUDS Program Policy (USACE, 2004) and the United States Environmental Protection Agency (USEPA) guidance *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents, EPA 540-R-98-031* (USEPA, 1999).

PUBLIC INVOLVEMENT

The Public is encouraged to comment on this Proposed Plan

Public comments on the Proposed Plan will be accepted during a 30-day public review and comment period from August 20, 2014, through September 22, 2014. In addition, a public meeting will be held at the beginning of the public review and comment period on August 20, 2014 to present this Proposed Plan. The USACE, in coordination with HDOH and landowners, will consider public comments received during the public meeting and comment period and will make a final decision concerning future action to be taken at the project site. USACE responses to public comments on this Proposed Plan will be contained in the "Responsiveness Summary" section of the Decision Document. The current schedule calls for completion of the Decision Document by December 2014.

Figure 2
Decision Document Process



The flow chart shown in Figure 2 summarizes the steps in the development and approval process of the project Decision Document. The Army is designated as the Executive Agent on behalf of the Department of Defense (DoD) charged with meeting applicable environmental restoration requirements at FUDS, regardless of which DoD component previously owned or used the property. The Secretary of the Army further delegated to USACE the program management and execution responsibility for FUDS.

2.0 PROJECT SITE BACKGROUND

The former WTA is a portion of the former Waikane Valley Training Area (WVTA), which consisted of approximately 1,061 acres that were used from 1942 to 1976 by the DoD as a training and artillery impact area. Live fire at the WVTA reportedly ceased in the early 1960s, but numerous types of munitions have since been recovered from the site, including 37mm and 75mm High Explosive (HE) rounds, 60mm HE mortars, M28 High Explosive Anti-Tank (HEAT) grenades, 2.36-inch and 3.5-inch

HEAT rockets, M9A1 AT rifle grenades, 3.5-inch practice rockets, and M29 practice rifle grenades. The former WTA covers approximately 933 acres of the WVTA and is the property that was evaluated during the RI. The remainder of the WVTA is currently owned by the U.S. Marine Corps (USMC) and is, therefore, not an eligible property under the Defense Environmental Restoration Program-Formerly Used Defense Sites (DERP-FUDS) program.

Ohulehule Forest Conservancy, LLC, is the current Landowner of the Southern Impact Region MRS

Properties within the MRSs in the former WTA are owned by several entities; The City and County of Honolulu, Ohulehule Forest Conservancy, LLC, and private landowners. Current and anticipated future land use patterns for the Southern Impact Region MRS is included in Table 1.

Table 1

Waikane MRS	Current Land Use	Anticipated Future Land Use
Southern Impact Region MRS	**Recreational** Unauthorized recreational activities include hunting, motocross, and ATV riding.	**Agricultural and Recreational** Agricultural (taro and cacao farming) and recreational (unauthorized hunting and motocross/ATV).

Overall Remedial Action Objective
Manage MEC exposure risk through a combination of removal/remediation, administrative controls, and/or public education; thereby rendering the site as safe as reasonably possible to humans and the environment and conducive to the anticipated future land use.

A Non-Time Critical Removal Action (NTCRA) Action Memorandum was developed upon finalization of the Engineering Evaluation/Cost Analysis (EE/CA) Report in 2008 (ZAPATA, 2008). Clearance to depth of detection was the recommended alternative for approximately 14.9 acres in the Southern Impact Region MRS and 26.2 acres in the Southeastern Region MRS encompassing areas where MEC and relatively high munitions debris (MD) concentrations were found. A NTCRA was conducted in 2011 (AOC #1 and AOC #2, Figure 3), with detailed results presented in the Site Specific (Removal Action) Final Report (Environet Inc., 2012). During the NTCRA, no MEC was recovered in the Southern Impact Region MRS.

The NTCRA recovered no MEC items from the Southern Impact Region MRS.

PREVIOUS PUBLIC INVOLVEMENT

In an effort to keep the public informed, nine Restoration Advisory Board (RAB) meetings and site visits relating to RI activities and Feasibility Study within the former WTA were conducted. RAB meetings and site visits were announced through notices in the local newspaper. Information was conveyed to the public via presentations, a project web site, and the information repositories. Public input was obtained through RAB meetings that included community involvement and requests for public comments.

3.0 PROJECT SITE CHARACTERISTICS

The majority of the Waikane Valley area consists of terrain that limits access/development due to steep gulches, canyons, rocky outcrops, and mountains rising over 2,090 feet above sea level. Access is very limited in many locations of the Southern Impact Region MRS portion of the former WTA boundary. Site access is limited by dense vegetation, steep terrain and a gated access road; however, indications of unauthorized site use and visitors have been observed. Most of the site is covered with mature vegetation including the densely-forested coastal plain and thick grasses and shrubs in the higher elevations. The Waikane Soil Series consists of well-drained, fine and moderately fine textured soils on uplands, fans, and terraces. The Waikane-Waikeekee Stream system is the primary stream network passing through the MRS. The Waikane and Waikeekee Streams combine and drain into Kaneohe/Koolau Bay. The area is well drained, generally to the east, with no wetlands except along the creek banks near the stream outlets. A number of culturally significant sites exist within the MRS. There are single family homes, industrial or warehouse areas, and a park within two miles of the site.

NATURE AND EXTENT OF CONTAMINATION

Munitions and Explosives of Concern

During the RI (June 2011), no MEC and only limited MD, other than that related to small arms ammunition, were recovered within accessible areas of the Southern Impact Region MRS. One MEC item (signal flare), limited MD (other than that related to small arms ammunition), and non-MD items were recovered in

the focused areas within the Southern Impact Region MRS where intrusive activities are anticipated by the Ohulehule Forest Conservancy, LLC (June 2014). There is physical evidence of MEC; however, accessible areas within this MRS do not appear to have been affected by concentrated munitions use. Although the potential presence of a receptor exists and there is a possibility of receptor interaction with an isolated MEC hazard, a complete MEC exposure pathway is considered unlikely in the accessible areas of the Southern Impact Region MRS. Exposure to potential explosive hazards in inaccessible areas is unknown due to the accessibility limitations generated by extreme topography. Active investigation/remedy measures are not practical in areas of the MRS that are inaccessible. As such, the possibility that an isolated explosive hazard exists within the MRS cannot be completely dismissed.

MEC items recovered within the Southern Impact Region MRS included: 37mm HE Projectiles and M126A1 Signal Flare.

Two MEC items (37mm HE) were discovered to a maximum depth of eight inches in the Southern Impact Region MRS during the EE/CA. Based on the discovery of MEC during the EE/CA, a NTCRA Action Memorandum (ZAPATA, 2009) was developed and a NTCRA was conducted in 2011 acres in the central portion of the MRS (AOC#1 and AOC #2, Figure 3) which was a surface and subsurface MEC removal. No MEC items were recovered in the Southern Impact Region MRS during the NTCRA or within the areas investigated during RI field work conducted in 2011. One MEC item (signal flare) was recovered at an approximate depth of four inches during the additional RI field work conducted in June 2014. The EE/CA, NTCRA and RI identified MD including remnants from various munitions including projectiles (i.e., 37mm); mortars (e.g., 60mm and 81mm HE); 3.5-inch rockets; flares; expended fuzes; unidentifiable munitions fragmentation, and small arms ammunition to a maximum depth of 12 inches. Figure 3 illustrates the distribution of MEC recovered during the EE/CA, NTCRA, RI and relative MD density.

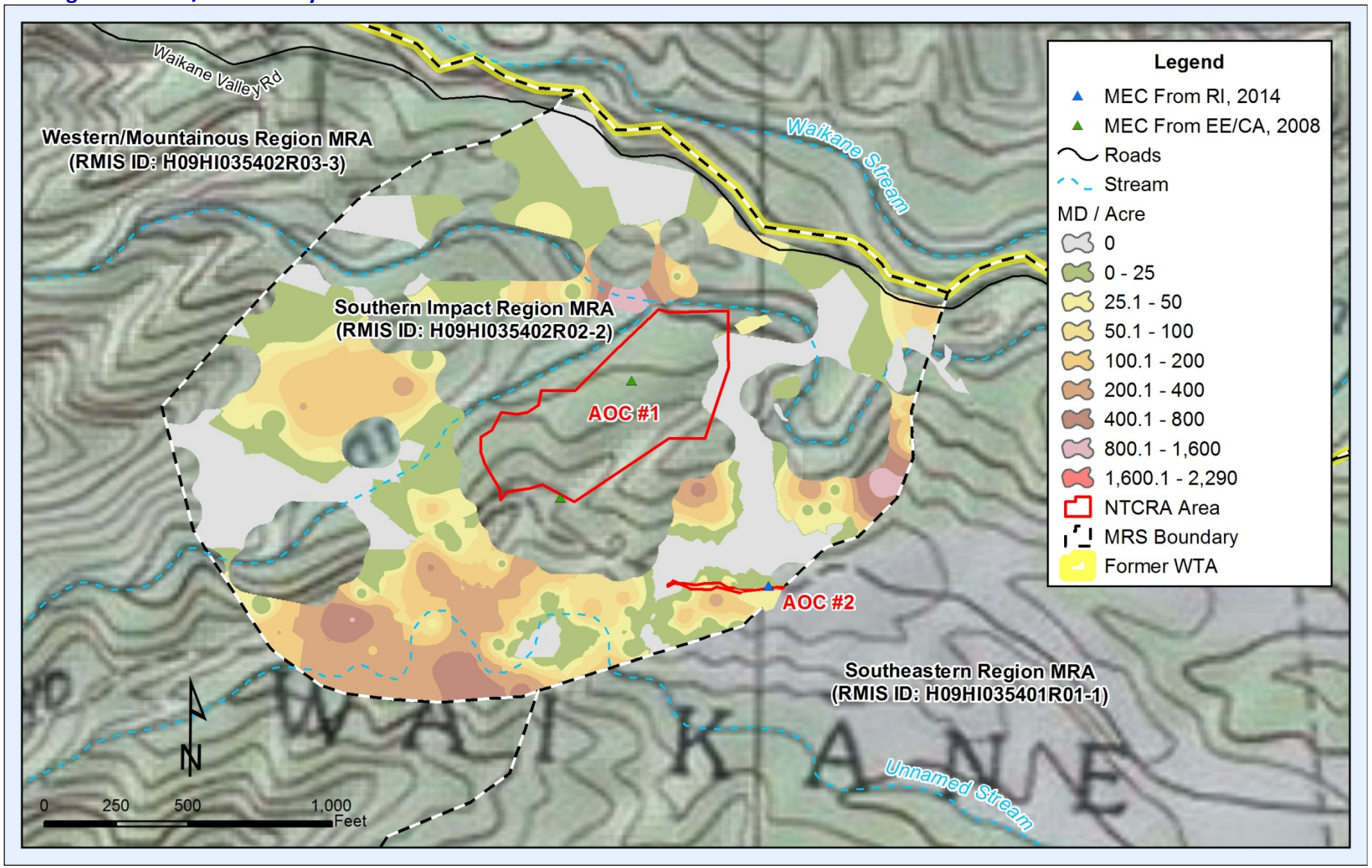
Potential for adverse risks to human health or ecological receptors from exposure to MC in soil and sediment is considered negligible in the Southern Impact Region MRS.

Munitions Constituents

To complete the characterization of MC at the former WTA, soil and sediment samples were collected at or near locations where MD were recovered within the MRS. Soil samples were collected using incremental (less than 2-inches bgs) and discrete (approximately 12-inches bgs) methods.

All concentrations were below the HDOH Environmental Action Level (EAL) in the Southern Impact Region MRS. The risk assessment concluded that the potential for adverse risks to human health or ecological receptors from exposure to MC in these media is considered negligible in the Sothern Impact Region MRS. As such, no further action is recommended for MC.

Figure 3 - MEC/MD Density



4.0 SCOPE AND ROLE OF RESPONSE ACTION

The Response Action's role is to limit the potential for receptors to encounter or interact with potential MEC.

A response action is used to prevent or minimize the potential interaction with MEC so that it does not cause substantial danger to present or future public health or welfare of the environment. The response action for the MRS manages risk from potential residual MEC hazards and incorporates input from the landowner and other interested community members. A remedial action that permanently reduces the toxicity, mobility and volume of hazardous materials, is not part of the preferred response action proposed for the Southern Impact Region MRS. Land use controls (LUCs), which may include physical, legal, or administrative mechanism that restricts the use of, or limits access to, contaminated property to prevent or reduce risks to human health and the environment, are the proposed response for this MRS.

5.0 SUMMARY OF PROJECT SITE RISKS

A qualitative MEC HA was conducted for the Southern Impact Region MRS to evaluate explosive hazard level conditions.

Site risks were evaluated in terms of an exposure model that consists of a source of contamination, a receptor, and interaction at the exposure point or exposure pathways. Within this model, the source would consist of MEC in the environment.

A qualitative MEC Hazard Assessment (HA) was conducted using information from investigations completed at the Site to provide a baseline assessment of response alternatives. The Inventory Project Report (INPR) and EE/CA indicated that the Southern Impact Region MRS contained MEC items initiating a NTCRA in a portion of this MRS (AOC #1 and AOC #2, Figure 3). A MEC HA was prepared for the Southern Impact Region MRS with baseline conditions representing current conditions (i.e., post-NTCRA). Exposure to potential explosive hazards in non-accessible areas is considered unlikely due to the limitations of the extreme topography which limits accessibility in those areas of the MRS.

The MEC HA considers the following factors:

- Presence and nature of MEC sources,

• Site characteristics that affect potential pathways between the MEC source and human receptors, and

• Types of activities that may result in exposure.

Considering the current site conditions (i.e., post-NTCRA) as the baseline, the MEC HA results potential for explosive hazard conditions is considered "low" for current and reasonably anticipated future land uses for the Southern Impact Region MRS at the former WTA. Results of the Hazard Assessment are discussed in detail within the RI Report (ZAPATA, 2012a), which is available on the project website and in the Administrative Record. Previously recovered MEC locations, MD density and future land-use activities were also used to assess response alternatives.

HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENTS

No further action is proposed for MC.

During the RI, a risk assessment was conducted to determine the human health and ecological risks associated with potential MC exposure at each of the MRSs. Based on the MC analytical results, the risk assessments concluded that the potential for adverse risks to human health or ecological receptors from exposure to MC is negligible at the former WTA.

No further action is proposed for MC within this MRS.

POTENTIALLY EXPOSED POPULATION

Human

The receptors associated with the former WTA are people including adults and children. Workers associated with agriculture and construction activities, recreational users (hunters, hikers, etc.), and visitors.

POTENTIAL MEC EXPOSURE PATHWAYS

In general, MEC must be disturbed to present an explosive hazard.

MEC has been found on the ground surface and in the subsurface. Land users could interact with surface MEC, whereas MEC in the subsurface is more likely to be encountered by land users while digging (e.g., agriculture and construction, etc.). Receptors will carry the potential of being exposed to MEC according to the nature of their work/activity, ranging from

contact with surface MEC, to those in contact with MEC in the subsurface.

It is important to note that exposure to MEC does not mean that an incident or accident will occur. A person would have to disturb the item (e.g., apply heat, friction or shock to the item) to be exposed to actual explosive hazards.

CONCLUDING STATEMENT

It is the USACE's current judgment that the Preferred Alternatives identified in this Proposed Plan, or one of the other active measures considered, herein, are necessary to protect public health or welfare or the environment from actual or threatened releases of explosive hazards that may present an imminent and substantial endangerment to public health or welfare.

6.0 REMEDIAL ACTION OBJECTIVES

The **Remedial Action Objective (RAO)** for the Southern Impact Region MRS is to reduce exposure to potential explosive hazards through a combination of removal/remediation, administrative controls, and/or public education; thereby rendering the site as safe as reasonably possible to humans and the environment and conducive to the anticipated future land use. The RAO defines the measure for success of the adopted remedial action. The technical details for alternatives associated with detection, recovery, and disposal of MEC would be specified during the future remedial design phase, if selected.

Southern Impact Region MRS - Reduce potential explosive safety hazards by informing the landowner and community of the potential hazard and educating them with regard to proper safety and reporting procedures in the event that MEC is encountered.

7.0 SUMMARY OF REMEDIAL ALTERNATIVES

All remedial alternatives include 5-year periodic reviews to ensure response action remains effective in accordance with current and future land use.

A description of each of the four alternatives developed for consideration during the FS is presented below. The preferred alternative for the MRS is presented in Section 9.0, herein.

Alternative 1 - No Action: No further action is conducted under this alternative. Evaluation of this alternative is required and used as a baseline for comparison with the other alternatives. No cost is associated with this alternative, since there would be no action. In the event that MEC is discovered in the future within an MRS where Alternative 1 is proposed, it would prompt action by USACE to determine an appropriate response alternative. The estimated cost for this alternative is $0.

Alternative 2 - Land Use Controls: LUCs are physical, legal, or administrative mechanisms that restrict the use of or limits access to real property to prevent or reduce risks to human health, safety and the environment. LUCs will include community MEC educational awareness program and information sheets attached to approved building permits. This alternative has no source reduction of potential MEC. Educational awareness can be effective at influencing people's behavior to reduce interaction with potential MEC.

Five-year reviews will also be conducted to re-evaluate if the response action continues to minimize explosives safety risks and continue to be protective of human health, safety, and the environment. More frequent formal reviews (more often than five years) may be needed if substantial land use changes are identified or RAOs are not being met.

The estimated net present worth cost for this alternative over 30 years is approximately $747,170 for this MRS.

Alternative 3 - Surface MEC Removal and Implementation of Land Use Controls: This alternative includes a visual inspection, aided by hand-held instruments, and removal of potential MEC exposed at ground surface. Brush clearance would be required in many areas prior to the removal. Personnel would traverse accessible areas (less than 30 degrees slope) in focused areas within the Southern Impact Region MRS where anticipated future land use includes intrusive activities. MEC that is identified or suspected would be removed and disposed of using approved/safe procedures. Accessibility to areas within each MRS will be dependent upon vegetation/terrain, landowner cooperation, and granting of right-of-entry. Surface Clearance can reduce risk where MEC is likely to be present on the surface, specifically, for receptors whose land use activities primarily

involve surface use (i.e., hunting, hiking, etc.). Risks associated with subsurface MEC may remain. Alternative 3 is considered appropriate in areas where MEC items are present on the surface.

LUCs and five-year reviews would be implemented as described in Alternative 2.

The estimated net present worth cost for this alternative over 30 years is $1,764,790 for the Southern Impact Region MRS.

Alternative 4 - Surface and Subsurface MEC Removal and Implementation of Land Use Controls: This alternative includes removal of MEC from the surface and in the subsurface in focused areas within the Southern Impact Region MRS where anticipated future land use includes intrusive activities. MEC removal would be conducted to identify and remove MEC. Hand-held analog geophysical instruments would be used over the accessible portions of the proposed removal areas, and anomalies would be identified for intrusive excavation. If MEC is encountered, the item would be disposed of using approved/safe procedures. Extensive brush clearance would likely be required in many areas prior to the removal action. The MEC removal would not be conducted under any existing paved surfaces, streams, and structures. Accessibility to areas within the MRS will be dependent upon vegetation/terrain, landowner cooperation, and granting of right-of-entry. Each anomaly would be pursued to a maximum depth of 24-inches (greatest depth of recovered MEC/MD items).

The completion of the MEC removal would significantly reduce MEC hazards; however, due to limitations in detection technology and because 100% coverage would not be possible in all areas of the site, it is possible that some munitions may not be detected. To reduce risk associated with potential residual munitions, LUCs would be implemented as described in Alternative 2. Alternative 4 is considered appropriate in areas where MEC items are present on the surface and in the subsurface.

LUCs and five-year reviews would be implemented as described in Alternative 2.

The estimated net present worth cost for this alternative over 30 years is $1,820,050 for the Southern Impact Region MRS.

Alternative 5 – Subsurface Removal to Support Unlimited Use: This alternative includes a response action that allows unlimited use. This alternative involves a combination of surface and subsurface MEC removal to a depth which allows for unlimited use and no LUCs. This alternative is not technically feasible due the extreme terrain which limits the ability for heavy equipment to access all locations of the site. Further, it does not comply with **Applicable or Relevant and Appropriate Requirements (ARAR)** since extensive vegetation removal would be required for this alternative thereby extinguishing nesting grounds for potentially migrating Threatened and Endangered species that are present on Oahu. Lastly, Alternative 5 is cost prohibitive compared to the other alternatives based on the low concentrations of MEC recovered during the RI, previous investigations and Remedial Action. Therefore, Alternative 5 was eliminated from further evaluation during the initial screening of the alternatives during the FS.

8.0 EVALUATION OF ALTERNATIVES

Nine criteria are used to evaluate response alternatives in order to select a remedy.

Remedial alternatives were developed during the FS in accordance with the NCP, 40 CFR 300.430(e). The NCP nine criteria were used to evaluate the different remedial alternatives individually and against each other in order to select a Preferred Alternative for the MRS. The nine criteria are presented in Table 2 and fall into three groups: threshold criteria, primary balancing criteria, and modifying criteria. The detailed screening of alternatives can be found in the FS Report. A description and purpose of the three groups follow:

- *Threshold criteria* are requirements that each alternative must meet in order to be eligible for selection.

The nine criteria fall into three groups: threshold criteria, primary balancing criteria, and modifying criteria.

- *Primary balancing criteria* are used to weigh major trade-offs among alternatives.

- *Modifying criteria* are considered to the extent that information is available, but cannot be fully evaluated until after public comment is received on this Proposed Plan. In the final balancing of tradeoffs among proposed

alternatives, modifying criteria are of equal importance as the balancing criteria.

Table 2

EVALUATION CRITERIA FOR REMEDIAL ALTERNATIVES		
Criteria	Threshold	1. Overall Protectiveness of Human Health and the Environment determines whether an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment.
		2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) evaluates whether the alternative meets Federal and State environmental statutes, regulations, and other requirements that pertain to the remediation or hazardous substances involved, or whether a waiver is justified.
	Primary Balancing	3. Long-Term Effectiveness and Permanence considers the ability of an alternative to maintain protection of human health and the environment over time.
		4. Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.
		5. Short-Term Effectiveness considers the length of time needed to implement an alternative and the risks the alternative poses to workers, residents, and the environment during implementation.
		6. Implementability considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.
		7. Cost includes estimated capital and annual operations and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.
	Modifying	8. State/Support Agency Acceptance considers whether the State agrees with the analyses and recommendations, as described in the FS and Proposed Plan.
		9. Community Acceptance considers whether the local community agrees with the analyses and preferred alternative. Comments received on the Proposed Plan are an important indicator of community acceptance.

Threshold Criteria

1. Overall Protection to Human Health and the Environment

This evaluation criterion assesses the protectiveness of an alternative and its ability to meet the RAOs. It assesses if an alternative reduces the public's potential exposure to MEC, thereby reducing potential injury or death, and protects the environment. When evaluating this criterion, the presence of MEC at the site, and current and anticipated future land uses is taken into consideration. Each alternative was also evaluated in terms of whether it would reduce the amount of MEC within the MRS. Alternative 1 does not offer protection to human health or the environment since no action is associated with this alternative. Alternative 2 is protective and relies on behavior modification of individuals when accessing the MRS as to the appropriate action in the event that MEC is encountered (i.e., do not handle suspected item and contact authorities).

Alternative 3 provides protection by removing MEC if it remains on the surface at an MRS. Alternative 4 provides protection by removing surface and subsurface MEC throughout the heaviest concentrated areas of MEC/MD presence within the MRS. Alternatives 3 and 4 have potential for accidental detonation as part of the investigative or removal process.

2. Compliance with Applicable or Relevant and Appropriate Requirements

This evaluation criterion serves to assess whether each alternative meets all the potential federal and state ARARs as identified in the RI phase. Based on the results of the RI, threats from concentrations of MC to human health or ecological receptors at the MRSs within former WTA are considered negligible. As such, ARARs for MC are not applicable. Alternatives 1, 2, 3 and 4 can be executed in a manner to meet applicable ARARs identified at the former WTA. ARARs include the Endangered Species Act of 1973, 16 U.S.C. 1538(a)(1)(B) and 40 CFR 264, Subpart X (as necessary to facilitate consolidated disposal of MEC during the remedial action). Only the substantive aspects of these laws are ARARs. Administrative requirements such as consultation and permitting are not ARARs.

Primary Balancing Criteria

The third through seventh criteria represent the "Balancing," or primary criteria upon which the analysis is based.

3. Long-Term effectiveness and Permanence

This evaluation criterion addresses the effectiveness of an alternative in terms of the risk remaining at the site after the response objectives have been met. Long-term management should be implemented post-remedial action to ensure effectiveness, especially with respect to any changes in land use. Alternative 4 was determined to provide the best long-term effectiveness and permanence based on the ability to significantly reduce the risk due to possible MEC on the surface and in the subsurface. Alternative 3 removes MEC from the surface and relies on educational awareness for long-term effectiveness to manage potential subsurface encounters with an explosive hazard. Although Alternative 2 can deter inappropriate interaction with MEC, it cannot prevent it. All alternatives, except Alternative 1, include five-year reviews to verify that the remedies remain effective.

4. Reduction of Toxicity, Mobility or Volume

Alternatives 1 and 2 offer no reduction in toxicity, mobility, or volume of contaminants and are assigned the lowest ranking. However, implementation of Alternative 2 is assumed to reduce receptor hours by encouraging individuals to spend less time within the MRSs through education. Alternative 3 provides some reduction of risk to MEC remaining on the surface, assuming any can still be found within the MRSs. Alternative 4 provides the greatest reduction of toxicity, mobility, or volume as a result of subsurface MEC removal. Implementation of Alternative 4 would remove the source (MEC) to the depth compatible with land use or actual known depths of the ordnance (less than 2-ft bgs.).

Alternative 4 (and to a much lesser extent Alternative 3) rely upon removal actions to decrease the MEC source hazard and reduce the likelihood of interaction. However, none of these alternatives will completely remove all of the MEC at the site; Alternatives 1 and 2 provide no reduction of MEC source.

5. Short-Term Effectiveness

Alternatives 3 and 4 are determined to have the greatest risk and least short-term effectiveness due to the risk to workers conducting removal. Due to the increased likelihood of MEC detonation during implementation of Alternatives 3 and 4, trained UXO-technicians must perform the work. Alternatives 1 and 2 present no short-term impacts or adverse impacts on workers and the community.

6. Implementability

Alternative 1 and Alternative 2 were determined to be the easiest to implement. Alternative 1 is both technically and administratively feasible, and no services or materials are necessary for implementation. Alternative 2 is also both technically and administratively feasible, with fact sheets and website readily available. Alternative 3 removes MEC from the surface and relies on educational awareness for long-term effectiveness. Alternatives 3 and 4 are both technically and administratively feasible but require specialized personnel and equipment to implement. Alternatives 3 and 4 also require the development of detailed work plans.

7. Cost

The cost criterion evaluates the financial cost to implement the alternative. The cost criterion includes direct, indirect, and long-term operation and maintenance costs. Direct costs are those costs associated with the implementation of the alternative. Indirect costs are those costs associated with administration, oversight, and contingencies. These costs were adapted from costs associated with similar activities conducted at former WTA and cost estimates prepared for other sites. The actual costs will depend on true labor rates, actual site conditions, final project scope, and other variable factors. The alternative with the lowest cost to implement would be Alternative 1, which requires no action; therefore, no costs are incurred. Alternative 2 requires relatively low costs compared to Alternatives 3 and 4, which are the most costly to implement. Overall, costs are alternative-specific and range from $0 (Alternative 1) to over $1.8 million (Alternative 4) for the Southern Impact Region MRS. Obtaining future funding for these focused removal actions may be difficult due to the higher costs.

Modifying Criteria

8. State Acceptance

The HDOH supports the preferred alternative in this Proposed Plan.

9. Community Acceptance

The community acceptance of the preferred alternative will be evaluated and assessed after the public comment period ends and will be described in the decision document for the MRS.

9.0 PREFERRED ALTERNATIVE

Southern Impact Region MRS

The Preferred Alternative for the Southern Impact Region MRS is Alternative 2 – Land Use Controls.

The Preferred Alternative for the Southern Impact Region MRS is Alternative 2 - Land Use Controls. Alternative 2, which includes an Educational Awareness Program and information sheets attached to approved building permits, is appropriate considering there is limited evidence of areas with concentrated munitions use based on the results of the field investigation conducted during the RI. As such, a complete exposure pathway is considered unlikely. There are many locations within the MRS with extreme terrain that were not considered safe or practical to investigate. Due to this uncertainty, there is potential for

MEC to remain within the MRS. Therefore, LUCs will be implemented. Brochures and MEC awareness training will inform the public and site visitors about potential hazards (MEC) and will identify appropriate response procedures in the event that MEC is found. Five-year reviews will be conducted to re-evaluate site conditions to ensure the LUCs remain effective in controlling potential explosive hazards. The estimated cost for implementing Alternative 2 at the Southern Impact Region MRS is approximately $747,170 to administer LUCs over 30 years.

Summary Statement

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

The preferred alternatives presented above are based on current information and could change in response to public comment or new information.

A public meeting will be held during the public review and comment period on August 20, 2014 to explain this Proposed Plan.

Written comments will be accepted from August 20, 2014 through September 22, 2014.

For more information about the Former Waikane Training Area please contact:

U.S. Army Corps of Engineers – Honolulu District

Kevin Pien
CEPOH- PP-E Bldg 252
Fort Shafter, HI 96858-5440
(808) 835-4091
Kevin.C.Pien@usace.army.mil

or visit the website:
http://www.poh.usace.army.mil/Missions/Environmental/FUDS/Waikane.aspx

10.0 COMMUNITY PARTICIPATION

USACE provided information and solicited public input to the investigation and remediation of the MRSs at former WTA through stakeholder and public meetings. Project related documents, such as the Remedial Investigation and Feasibility Study Reports, are available digitally on the project website and bound copies placed in the Information Repository:

Information Repository/Administrative Record
Kaneohe Public Library
45-829 Kamehameha Highway
Kaneohe, Hawaii 96744
Telephone: (808) 233-5676

The USACE is soliciting public review and comment on all the alternatives identified for the MRSs. Public comments are considered before any action is selected and approved. A public meeting will take place on at 7:00pm on August 20, 2014, at the Waiahole Elementary School Cafeteria, 48-215 Waiahole Valley Road, Kaneohe, HI 96744. Representatives from the CEPOH and the HDOH will be present at the meeting to explain this Proposed Plan, listen to concerns raised, answer questions, and accept public comments.

Written comments will be accepted throughout a 30-day public comment period from August 20, 2014 through September 22, 2014. Please submit written comments to the CEPOH.

U.S. Army Corps of Engineers – Honolulu District

Kevin Pien – Project Manager
U.S Army Corps of Engineers – Honolulu District
CEPOH-PP-E Bldg 252
Fort Shafter, HI 96858-5440
(808) 835-4091
Kevin.C.Pien@usace.army.mil

RECOGNIZE
Military Items can be DANGEROUS.

RETREAT
DO NOT TOUCH IT!
Move away from the area.

REPORT
CALL 911

REFERENCES

Environet Inc., 2012. Site Specific Final Report Munitions and Explosives of Concern (MEC) Removal Action and Supporting Functions Waikane Training Area, Island of Oahu, Hawaii

USACE, 2004. U.S. Army Corps of Engineers Engineer Regulation 200-3-1, Formerly Used Defense Site (FUDS) Program Policy.

USEPA, 1999. A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents. USEPA Office of Solid Waste and Emergency Response. EPA 540-R-98-031.

ZAPATA, 2008. Final Engineering Evaluation/ Cost Analysis (EE/CA) Report for the Former Waikane Training Area, Kaneohe, Oahu, Hawaii. Prepared for the U.S. Army Engineering and Support Center, Huntsville, USACE, Honolulu District.

ZAPATA, 2012a. Final Remedial Investigation Report for the Former Waikane Training Area, Kaneohe, Oahu, Hawaii. Prepared for the U.S. Army Engineering and Support Center, Huntsville, USACE, Honolulu District.

ZAPATA, 2013a. Final Feasibility Study Report for the Former Waikane Training Area, Kaneohe, Oahu, Hawaii. Prepared for the U.S. Army Engineering and Support Center, Huntsville, USACE, Honolulu District.

ZAPATA, 2013b. Final Proposed Plan for the Former Waikane Training Area, Kaneohe, Oahu, Hawaii. Prepared for the U.S. Army Engineering and Support Center, Huntsville, USACE, Honolulu District.

ZAPATA, 2014. Final Remedial Investigation Addendum for the Former Waikane Training Area, Kaneohe, Oahu, Hawaii. Prepared for the U.S. Army Engineering and Support Center, Huntsville, USACE, Honolulu District.

GLOSSARY OF TERMS

Administrative Record – A compilation of all documents relied upon to select a remedial action pertaining to the investigation and remediation of the project site.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – Congress enacted CERCLA (42 USC § 9620 et seq.), commonly known as Superfund, on 11 December 1980. This law addresses the funding for, and remediation of abandoned or uncontrolled hazardous waste sites. This law also establishes criteria for the creation of key documents such as the Remedial Investigation, Feasibility Study, Proposed Plan, and Decision Document.

Decision Document – A document that is used to record the remedial response decisions after the lead agency has considered all comments from both the support agency and the public.

Feasibility Study (FS) – The study evaluates possible remedial alternatives using the information generated from the Remedial Investigation. The FS becomes the basis for selection of a remedy that effectively mitigates the threat posed by contaminants at the site.

Formerly Used Defense Site (FUDS) – Locations that were owned by, leased to, or otherwise possessed by the Department of Defense. The term does not include any operational range, operating storage or manufacturing facility, or facility that was used for or was permitted for the treatment or disposal of military munitions.

Land Use Controls (LUCs) – Physical, legal, or administrative mechanisms that restrict the use of, or limit access to, contaminated property to reduce risk to human health and the environment. Institutional controls (IC) are a subset of LUCs and may include education and outreach to minimize the impact if MEC is encountered.

Munitions Constituent (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.

Munitions and Explosives of Concern (MEC) – This term, which distinguishes specific categories of military munitions that may pose unique explosives safety risks means: (a) unexploded ordnance (UXO); (b) discarded military munitions (DMM); or (c) munitions constituents (MC) (explosives such as TNT, RDX present in high enough concentrations to pose an explosive hazard).

Munitions Response Site (MRS) – A discrete location within a defense site that is known to require a munitions response (investigation, removal action and/or remedial action).

Preferred Alternative – The alternative that, when compared to other potential alternatives, was determined to best meet the CERCLA evaluation criteria and is proposed for implementation at the site.

Proposed Plan – The plan that identifies the preferred remedial alternative for a site, and is made available to the public for comment.

Remedial Investigation (RI) – An investigation to determine the nature and extent of contamination, assess human health and environmental risks posed by the contaminants, and provide a basis for the development of response action alternatives.

ACRONYM LIST

ARARs	Applicable or Relevant and Appropriate Requirements
bgs	Below Ground Surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DERP	Defense Environmental Restoration Program
DoD	Department of Defense
EAL	Environmental Action Level
EE/CA	Engineering Evaluation/Cost Analysis
FS	Feasibility Study
ft	Feet
FUDS	Formerly Used Defense Site
HDOH	State of Hawaii, Department of Health
HE	High Explosive
HEAT	High Explosive Anti-Tank
IC	Institutional Control
INPR	Inventory Project Report
LUC	Land Use Control
MC	Munitions Constituent
MD	Munitions Debris
MEC	Munitions and Explosives of Concern
MRS	Munitions Response Site
NCP	National Contingency Plan
NDAI	No Department of Defense Action Indicated
NTCRA	Non-Time Critical Removal Action
PP	Proposed Plan
RAO	Remedial Action Objective
RI	Remedial Investigation
ROE	Rights-of-Entry
SI	Site Inspection
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USMC	United States Marine Corps
UXO	Unexploded Ordnance
WTA	Waikane Training Area

COMMENT FORM

Your Name:

Your Address:

Your Phone Number:

Email Address:

Comments:

Please mail or email comments on this Proposed Plan to:
Kevin Pien – Project Manager
U.S Army Corps of Engineers – Honolulu District
CEPOH-PP-E Building 252
Fort Shafter, HI 96858-5440
(808) 835-4091
Kevin.C.Pien@usace.army.mil

If you have special needs or require this document in an alternate form, please call Kevin Pien at (808) 835-5440.

Comments must be postmarked or submitted via e-mail by September 22, 2014.