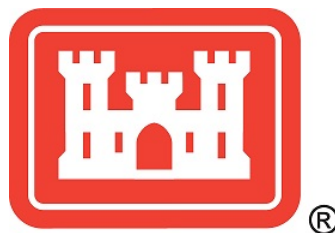


Waikoloa Maneuver Area

Property No. H09HI0359

**Comprehensive Strategic Plan for the Waikoloa
Maneuver Area 22-MRSs to achieve
Response Complete (RC)**



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June 2021

Former Waikoloa Maneuver Area Comprehensive Strategic Plan for FY21-FY22

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TABLE OF CONTENTS

1 Introduction1
1.1 Purpose and Objective1
1.2 Data Sources.....3
1.3 Site Background3
1.4 Plan Overview5
2 Technical Approach.....5
2.1 Characterize the Nature and Extent of MEC at Uninvestigated Areas5
2.1.1 Develop Conceptual Site Models (CSMs)..... 5
2.1.2 Identify Data Quality Objectives (DQOs) 6
2.2 MRS with Non-Time-Critical Removal Actions6
2.2.1 Remedial Investigation/Feasibility Study Phase 6
2.2.2 Remedial Design Phase..... 7
2.2.3 Five-Year Review (FYR) 7
3 Areas for Optimization8
3.1 Density Distribution and Mapping Initiatives8
3.2 Realignment of MRS Boundaries.....8
5 Annual Workplan9
6 Five-Year Look Ahead.....10

LIST OF TABLES

Table 1 Summary of FUDS MRSs at the Former WMA.....4

LIST OF FIGURES

Figure 1 WMA Site Map.....2

ACRONYMS

AAA	Army Audit Agency
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CSM	Conceptual Site Model
CSP	Comprehensive Strategic Plan
CTC	Cost to Complete
DD	Decision Document
DoD	Department of Defense
DQO	Data Quality Objective
EE/CA	Engineering Evaluation/Cost Analysis
FUDS	Formerly Used Defense Sites
FUDSMIS	Formerly Used Defense Site Management Information System
FYR	Five Year Review
HQUSACE	Headquarters, U.S. Army Corps of Engineers
INPR	Inventory Project Report
LTM	Long Term Monitoring
MEC	Munitions and Explosives of Concern
MMRP	Military Munitions Response Program
MR	Munitions Response
MRA	Munitions Response Area
MRS	Munitions Response Site
MRSPP	Munitions Response Site Prioritization Protocol
NFA	No Further Action
NLR	No Longer Required
NTCRA	Non-Time-Critical Removal Action
OERIA	Ordnance and Explosives Risk Impact Assessment
PA	Preliminary Assessment
PDT	Project Delivery Team
POD	USACE Pacific Ocean Division
POH	USACE Honolulu District
QAPP	Quality Assurance Project Plan
RA-C	Remedial Action-Construction
RAB	Restoration Advisory Board
RD	Remedial Design
RI/FS	Remedial Investigation/Feasibility Study
RC	Response Complete
SMAP	State Management Action Plan
SSFR	Site-Specific Final Report
USACE	U.S. Army Corps of Engineers
WMA	Waikoloa Maneuver Area

1 Introduction

The former Waikoloa Maneuver Area (WMA), Formerly Used Defense Sites (FUDS) Property No. H09HI0359, is the largest FUDS property within the U.S. Army Corps of Engineers (USACE) Honolulu District's (POH) area of responsibility. In 2018, the FUDS property was expanded from 100,220.5 acres to 185,309.012 acres consistent with historical records found while preparing the Preliminary Assessment (PA), which is in the process of being finalized. The WMA munitions response area (MRA) is separated into 22 munitions response sites (MRSs) labeled with letters and numbers (**Figure 1**).

Between June 2019 and February 2020, the Army Audit Agency (AAA), under the authority of the Auditor General, performed a review of the USACE Pacific Ocean Division (POD) FUDS program to determine if it effectively managed the environmental cleanup and restoration program. As part of the assessment, the AAA reviewed contract actions for the former WMA and recommended that POH create a comprehensive strategy to achieve "Response Complete" status for the former WMA prior to entering any additional contracts or task orders at the site.

The strategy to reduce risk and achieve response complete (RC) at WMA will be updated annually as part of the Comprehensive Strategy Plan (CSP) and done in accordance with FUDS ER 200-3-1. POH developed this CSP to present the technical, cost and phase elements into one programmatic planning document. Unique to the CSP is a presentation of potential areas for optimization within the WMA FUDS Program.

1.1 Purpose and Objective

The purpose of the CSP is to compile the information necessary to guide program execution at the former WMA to achieve Response Complete (RC) in a deliberate, planned approach such that the scope of work, phase and cost to complete (CTC) are accessible in one location.

This CSP is intended to be a living document that will be annually revised by the end of the first quarter each fiscal year throughout the life cycle of the WMA projects. Annual updates to the CSP will mark progress to achieve RC at each MRS as well as provide a revised strategy with updated phase and CTC as new information becomes available. The annual WMA strategy will be updated collaboratively by POH and POD. The life cycle plan (LCP) for each MRS will be reviewed and actions will be prioritized.

FIGURE 1
Former Waikoloa Maneuver Area
BUILDING STRONG®

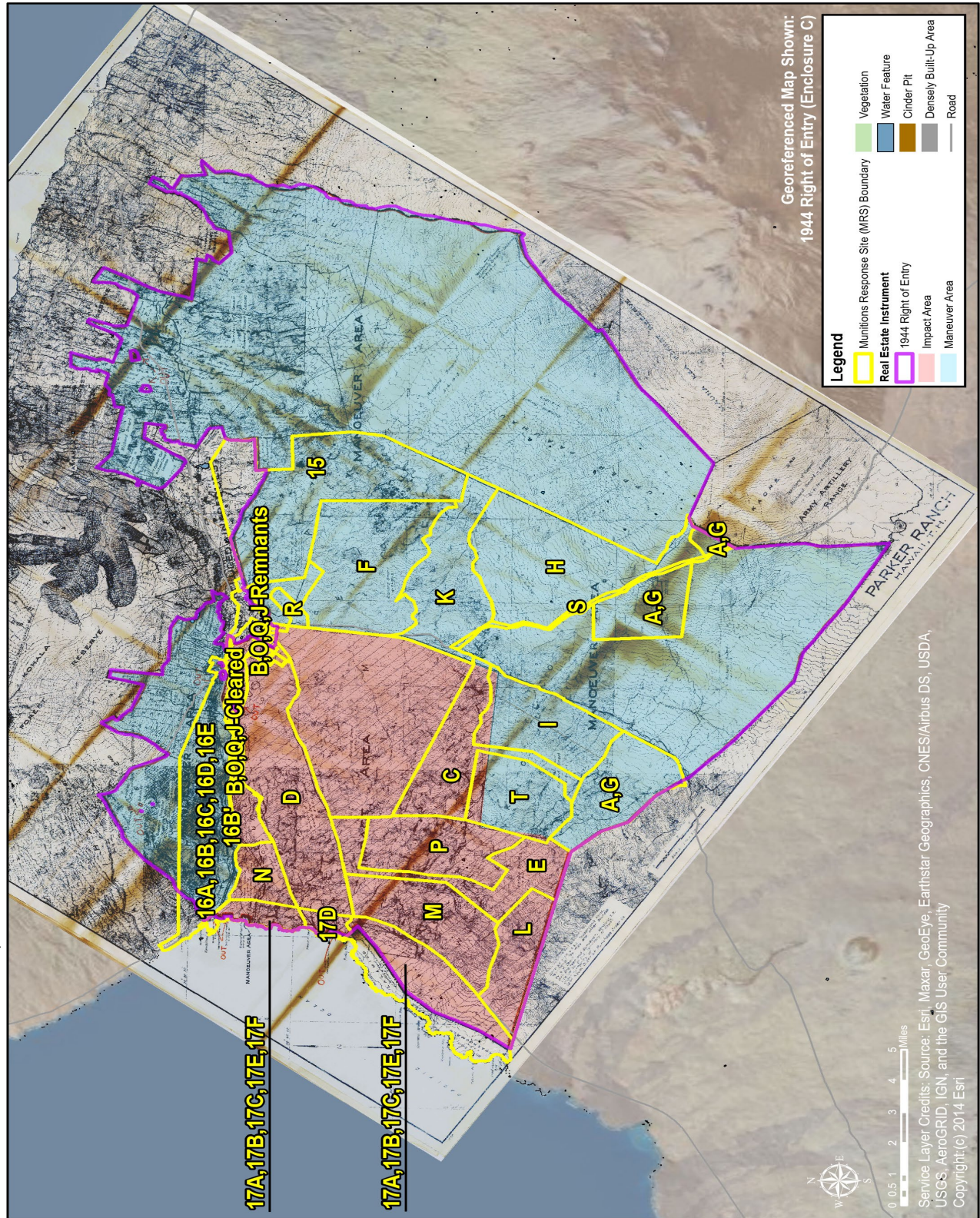


Figure 1: WMA Site Map

1.2 Data Sources

The information presented in the CSP is a compendium of multiple data sources prepared as part of the FUDS annual reporting requirements for WMA to include the following:

- Annual Hawaii State Management Action Plan (SMAP)
 - MRS Priority
- Annual FUDS Workplan
 - POH Annual Acquisition Plan for FUDS
- FUDSMIS Database
 - Current Comprehensive Environmental Response, Compensation Liability Act (CERCLA) Phase per MRS
 - Life Cycle Plan
 - Cost to Complete (CTC)
 - Schedule
 - Munitions Response Site Prioritization Protocol (MRSP) Scores

1.3 Site Background

The former WMA FUDS consists of 185,309.012 acres in South Kohala on the Island of Hawaii, HI. The Marine Corps acquired the land by temporary right of entry and license from Richard Smart, the owner of Parker Ranch, and developed a training area beginning in December 1943 for the 2nd and 5th Marine Divisions.

The Phase II Engineering Evaluation/Cost Analysis (EE/CA), conducted from November 2000 to May 2001, divided WMA into sectors based on past military usage, current and future land uses, land ownership or administration, and/or prominent geographic features (e.g., roads, gullies, property fence lines) that would enable field personnel to identify specific sector boundaries in the field. The Phase II EE/CA report (January 2002) reclassified the sectors into 20 lettered Ordnance and Explosives Risk Impact Assessment (OERIA) areas based on type, quantity, location, and depth of unexploded ordnance and munitions debris recovered; documented records of previous munitions and explosives of concern (MEC) finds; past, current, and reasonably anticipated future land use; and input from local agencies, stakeholders, and the community.

In 2013, WMA underwent a realignment as a result of an administrative change that revised and renamed MRA/MRS definitions mandated by the Department of Defense (DoD). WMA was divided into 22 Military Munitions Response Program (MMRP) Project Numbers 01 through 23 (Project No. 03 is the Restoration Advisory Board (RAB) project and not an MRS) that cover approximately 100,220 acres of FUDS eligible and adjacent lands. In 2018, the FUDS property was expanded from 100,220.5 acres to 185,309.012 acres consistent with historical records. **Table 1** below summarizes the projects and cleanup priority as reported in the 2020 Hawaii SMAP including the portions of each project that have undergone a Non-Time Critical Removal Action (NTCRA).

Former Waikoloa Maneuver Area Comprehensive Strategic Plan for FY21-FY22

Table 1: Summary of FUDS MRSs at the Former WMA

Proj No.	MRS Area/Sector	MRSP	SMAP Priority FY20	Decision Document Status	CERCLA Phase (status)	Total Acres	NTCRA Acres
1	A & G	3	4	No DD	RI/FS (Ongoing)	7354.6	n/a
2	B,O,Q,J Cleared	3	1	DD signed August 2016	RD (Ongoing)	3548.4	3531.3
4	B,O,Q,J Remnants	2	2	DD signed September 2018	RD (Ongoing)	932.7	272.8
5	C	3	16	DD signed February 2018	RD (Planned)	4644.3	n/a
6	D	2	17	DD signed March 2017	RD (Planned)	8525.3	7200.4
7	M	2	6	DD signed March 2017	RA-C (Ongoing)	5074	2638.3
8	N	2	12	DD signed March 2016	RA-C (Ongoing)	1592	1562.3
9	Sector 16B'	NLR	11	DD signed March 2016	LTM (Ongoing)	3.7	3.7
10	Sector 17D	2	7	DD signed August 2016	RD (Ongoing)	548.7	508.7
11	E	2	15	No DD	RI/FS (Planned)	3892.1	1545.3
12	I	5	18	No DD	RI/FS (Planned)	4723.6	1284.4
13	K	4	19	No DD	RI/FS (Planned)	5355.7	469.3
14	L	4	20	No DD	RI/FS (Planned)	3118.5	n/a
15	S	NLR	22	DD signed January 2016	RC	534.6	204.8
16	T	3	14	No DD	RI/FS Ongoing	3777.2	165
17	H	5	21	No DD	RI/FS (Planned)	8937.8	n/a
18	R	2	13	DD signed March 2017	RA-C Ongoing	379.7	282.2
19	Sector 15	5	3	No DD	RI/FS Ongoing	11233.3	533.3
20	Sectors 16A-E	5	8	No DD	RI/FS Ongoing	6600.8	28.9

Former Waikoloa Maneuver Area Comprehensive Strategic Plan for FY21-FY22

21	Sectors 17A,B,C,E,F	3	10	No DD	RI/FS Ongoing	6874.6	2115.6
22	P	3	5	DD signed April 2017	RA-C Ongoing	4520.4	3547.5
23	F	3	9	No DD	RI/FS Ongoing	8049	3522.2

DD = Decision Document

RI/FS = Remedial Investigation/Feasibility Study

RA-C = Remedial Action-Construction

RD = Remedial Design

RC = Response Complete

LTM = Long Term Monitoring

NFA = No Further Action

NLR = No Longer Required

1.4 Plan Overview

The plan to reach RC at WMA requires MRSs be investigated and remediated in accordance with the CERCLA process. Based on a low priority ranking in the annual SMAP, many of the MRSs have yet to undergo a Remedial Investigation (RI) to characterize the nature and extent of MEC. These sites will require collection of valid site data and a risk assessment to ensure that a future remedy, if any, is protective of human health and the environment. The technical approach for data collection at these sites is discussed in Section 2.2 and Section 2.3.1. The approach for the MRSs that have undergone NTCRA and have a signed Decision Document (DD) and are currently in a CERCLA Remedial Design phase are discussed in Section 2.3.2. MRSs with Remedial Action-Construction initiated and subject to five-year review (FYR) cycle are addressed in Section 2.3.3. Areas for optimizing the WMA Program which includes additional data analysis to support decision-making for effective and efficient use of funding resources is presented in Section 3. The remaining sections address annual workplan updates and CTC.

2 Technical Approach

2.1 Characterize the Nature and Extent of MEC at Uninvestigated Areas

Eleven of the 22 MRSs at WMA are in the RI/FS phase of the CERCLA process. Using the data presented in the Final PA, USACE will develop a conceptual site model (CSM) and Data Quality Objectives (DQOs) for each MRS using the worksheet templates in the Munitions Response (MR) Quality Assurance Project Plan (QAPP), USACE, 2020. These two worksheets will foster discussions with stakeholders on the proper scope of the RI.

2.1.1 Develop Conceptual Site Models (CSMs)

The CSM presents the physical, chemical, and biological processes that control the transport, migration, and the potential impacts of MEC and MC contamination to human and/or ecological receptors. This process starts for each MRS using Worksheet #10 of the MR QAPP which is developed by the Project Delivery Team (PDT) selected for the

project. The PDT in turn drafts, peer reviews and presents the findings to the regulator for their consideration prior to the Systematic Project Planning (SPP) meeting. Preparation of the CSM is typically one of the first steps of planning a RI at a site and will guide data collection activities such that the potential distribution of MEC within the MRS is understood.

2.1.2 Identify Data Quality Objectives (DQOs)

The DQO Process is a series of logical steps that guides acquisition of environmental data. It is both flexible and iterative as it applies to decision-making. Use of the DQO Process leads to efficient and effective expenditure of resources; gains consensus on the type, quality, and quantity of data needed to meet the project goal; and documents the actions taken during the development of the project. It is designed to provide data to support risk-based decisions.

DQOs will be developed for the planned investigations or other actions at each MRS and these will be presented on Worksheet #11 of the MR QAPP. The results of the field investigations will refine the preliminary CSM (Worksheet #10) and resolve any data gaps.

2.2 MRS with Non-Time-Critical Removal Actions

USACE POH has executed multiple NTCRAs for MEC on thousands of acres of land at WMA since 2004. The NTCRAs, although effective at reducing risk, do not typically provide the level of protection or permanence of a remedial action, but can be used in conjunction with the RI/FS phase work to make decisions that support RC. The following sections detail the plan to achieve RC in the MRSs where NTCRAs were conducted. See **Table 1** above, which lists the 18 MRSs where NTCRAs have been carried out at a portion of the MRS.

2.2.1 Remedial Investigation/Feasibility Study Phase

Eight of the MRSs where a NTCRA was conducted are currently in the RI/FS phase. The NTCRAs, although effective at reducing risk, do not typically provide the level of protection or permanence of a remedial action. However, work done as part of a previous removal action can be used to support an RC determination if the RI/FS determines that the removal action addressed the unacceptable risk at the site. These sites, listed below, will have the NTCRA acreage reexamined during the planning process as described in Section 2.2 above in order to determine the scope of the effort necessary to characterize the nature and extent of MEC contamination throughout the entire MRS:

- Area E
- Area F
- Area I
- Area K
- Area T
- Sector 15
- Sectors 16A-E
- Sector 17 A, B,C,E,F

Results of the Remedial Investigation will be summarized in the RI report and a Feasibility Study will be conducted if warranted. The CTC will be refined and updated based on the results of the RI activities. These sites will follow the remainder of the CERCLA process as applicable to achieve RC.

2.2.2 Remedial Design Phase

Five of the MRSs with NTCRAs are in the RD phase where the technical specifications for geophysical technologies to locate MEC are designed to implement the selected remedy in accordance with the DD. These sites listed below will have the NTCRA documentation reviewed and evaluated for data gaps during the planning phase. If data gaps are identified, additional investigation of the NTCRA areas using transects and geophysical investigation may be performed, if warranted. CTCs will be updated prior to the workplan build, to include additional cost for inspecting areas where NTCRA was conducted previously. The sites scheduled for this additional level of document review include:

- Area B,O,Q,J Cleared
- Area B,O,Q,J Remnants
- Area C
- Area D
- Sector 17D

If during the RD phase a nonsignificant or minor change to the DD is required due to such things as new technical information, support agency/community concerns and/or cost reductions to implement the remedy, a memorandum for record (MFR) will be prepared and kept with the project file. If additional investigation of NTCRA areas identifies a need for a significant or fundamental change to the remedy to ensure the remedy is protective of human health or the environment, a post-DD change document will be prepared consistent with section 300.435 of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR Part 300).

2.2.3 Five-Year Review (FYR)

As part of the CERCLA process, a FYR is conducted at a site if the selected remedy results in any hazardous substances or pollutants or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure (UU/UE). FYRs are conducted no later than five years after the initiation of on-site field work for the remedial action or, if no on-site field work is required, no later than five years after the signature date of the DD. The five WMA MRSs that are currently subject to the FYR requirement are listed below:

- Area M
- Area N
- Area 16B' (Land Use Controls Only)
- Area P
- Area R

A FYR will be conducted at the MRSs listed above to determine whether the remedy at the site is or will be protective of human health or the environment. The FYR will include a review of existing documentation for each MRS, a site visit, and community interviews. The FYR will determine whether additional work is necessary in NTCRA areas. If additional cleanup is necessary, CTCs will also be updated to include these costs prior to including projects on the annual workplan build. If the FYR identifies a need for a significant or fundamental change to the remedy to ensure the remedy is protective of human health or the environment, a post-DD change document will be prepared consistent with section 300.435 of the NCP (40 CFR Part 300).

3 Areas for Optimization

3.1 Density Distribution and Mapping Initiatives

The way WMA has been contracted over the years has led to multiple independent data sets being prepared to document the removal of MEC over numerous and focused project areas within the former WMA MRA. These independent data sets were created using multiple approaches over multiple years, and because the Preliminary Assessment has not yet been finalized, these removal actions were conducted without the understanding of historic range orientation or site layout.

A Geographical Information System analyst will consolidate previous data sets, which will include defined confidence or uncertainty of the data, into a single metadata map file. This file will present spatial information on the extent of munitions use which will graphically present the impact area and assist the project team by making it easier to document and locate data specific sets (type of munition, depth of detection, etc.). Additionally, this consolidated information will aid with future acquisition planning and long-term risk management.

3.2 Realignment of MRS Boundaries

MRS boundaries originally identified in 2001 and administratively revised to MRSs in 2013 appear to have been drawn based on inferred previous use and geographic boundaries rather than Tax Map Key (TMK) legal boundaries. These administrative MRS boundaries limit the work that can be performed in an area due to how projects are funded within the FUDS program.

Additional knowledge gained over last 20 years indicates that MRS boundaries should be reexamined to better facilitate cleanup action allowing time, money and effort to be expended where it will have greatest effect at reducing long-term environmental liability.

As part of the Comprehensive Plan for WMA, MRS boundaries will be examined to determine if revising the boundaries into manageable size parcels with boundaries determined with stakeholder input is of benefit to USACE. Revisions to MRSs will be determined upon consultation with the technical team and the boundaries of each will be determined in consultation with stakeholders where applicable. Along with a

Former Waikoloa Maneuver Area Comprehensive Strategic Plan for FY21-FY22

technical delineation, numerous administrative steps are required prior to potentially revising an MRS boundary to include such things as an Inventory Project Report (INPR) Amendment, revised MRS maps and Property maps, revised cost to complete, revised MRSPP scoring, etc. If multiple MRSs are combined during delineation, HQUSACE approval will be required.

4 Cost to Complete

Current CTC to achieve RC for the WMA MRA based on the FY21 forecast is \$295,420,078.70. CTCs are updated annually as new information becomes available.

5 Annual Workplan

The Official Workplan (WP) provides a list of project phases approved for work in the current year (CY). During the CY, the workplan for the budget year (BY) is built and will become the Official WP when the BY becomes the CY. The final BY WP determines the project funding budgeted for the division and is part of the baseline obligation metrics. The process of developing the BY WP is referred to as the BY WP build.

Workplan development is based on the Technical Approach described in Section 2 and in accordance with CERCLA. In FY21 the following WMA MRS that are still progressing to RC were included in the CY workplan:¹

Property Name	Proj No.	Project Name	Category	Phase
Waikoloa Maneuver Area	01	Areas A and G	MMRP	RI/FS
Waikoloa Maneuver Area	02	Areas B, O, Q and J-Cleared	MMRP	RD
Waikoloa Maneuver Area	04	Areas B, O, Q and J-Remnants	MMRP	RD
Waikoloa Maneuver Area	07	Area M	MMRP	RA-C
Waikoloa Maneuver Area	08	Area N	MMRP	RA-C
Waikoloa Maneuver Area	10	Sector 17D-Hapuna State Rec Area	MMRP	RD
Waikoloa Maneuver Area	11	Area E	MMRP	RI/FS
Waikoloa Maneuver Area	16	Area T	MMRP	RI/FS
Waikoloa Maneuver Area	18	Area R	MMRP	RA-C
Waikoloa Maneuver Area	19	Sector 15	MMRP	RI/FS
Waikoloa Maneuver Area	20	Sectors 16A, 16B, 16C, 16D and 16E	MMRP	RI/FS
Waikoloa Maneuver Area	21	Sectors 17A, 17B, 17C, 17E and 17F	MMRP	RI/FS
Waikoloa Maneuver Area	22	Area P	MMRP	RA-C
Waikoloa Maneuver Area	23	Area F	MMRP	RI/FS

In FY22, the following WMA MRSs that are still progressing to RC were included as “Must Fund” in the BY workplan:²

¹ The CY workplan also includes funding for Project 0, PA/INPR Funding; Project 03, Restoration Advisory Board (RAB); and Project 09, Sector 16B’-Hand Grenade Area. Projects 0 and 03 are not MRSs, and Project 09 is at RC and is funded for LTM.

² The CY workplan also includes funding for Project 0, PA/INPR Funding; Project 03, Restoration Advisory Board (RAB); and Project 09, Sector 16B’-Hand Grenade Area. Projects 0 and 03 are not MRSs, and Project 09 is at RC and is funded for LTM.

Former Waikoloa Maneuver Area Comprehensive Strategic Plan for FY21-FY22

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Waikoloa Maneuver Area	01	Areas A and G	MMRP	RI/FS
Waikoloa Maneuver Area	02	Areas B, O, Q and J-Cleared	MMRP	RD
Waikoloa Maneuver Area	04	Areas B, O, Q and J-Remnants	MMRP	RD
Waikoloa Maneuver Area	06	Area D	MMRP	RD
Waikoloa Maneuver Area	07	Area M	MMRP	RA-C
Waikoloa Maneuver Area	08	Area N	MMRP	RA-C
Waikoloa Maneuver Area	10	Sector 17D-Hapuna State Rec Area	MMRP	RD
Waikoloa Maneuver Area	11	Area E	MMRP	RI/FS
Waikoloa Maneuver Area	16	Area T	MMRP	RI/FS
Waikoloa Maneuver Area	18	Area R	MMRP	RA-C
Waikoloa Maneuver Area	19	Sector 15	MMRP	RI/FS
Waikoloa Maneuver Area	20	Sectors 16A, 16B, 16C, 16D and 16E	MMRP	RI/FS
Waikoloa Maneuver Area	21	Sectors 17A, 17B, 17C, 17E and 17F	MMRP	RI/FS
Waikoloa Maneuver Area	22	Area P	MMRP	RA-C
Waikoloa Maneuver Area	23	Area F	MMRP	RI/FS

The National FUDS Program Manager (PgM) will not release funding to any project until verification is made that the project is being executed in accordance with the strategy established in the current CSP. For sites that are in RA-C, before releasing funding, the National FUDS PgM will ensure that any changes to the selected remedy have been appropriately documented and that the CTC has been updated accordingly.

By September 2021, a PDT will be established with the primary role to conduct a detail evaluation of each MRS, MRS optimization and to develop an overall funding strategy that will get sites to RC in an efficient manner. The PDT will consist of members from HQ, POD, POH, USACE Environmental and Munitions Center of Expertise and USACE Military Munitions Design Center.

6 Five-Year Look Ahead

For planning purposes, a five-year look ahead for the WMA Program can be projected based on the MRS priority presented in the latest SMAP, the funding required for the phase of work, and the proposed implementation date based on the schedule as presented in FUDMIS. All MRSs included in the FY21/22 workplan are scheduled for additional activities through 2027 dependent on availability of funding. Projects with projected start dates beyond five years include Area C, Area D, Area H, Area I, Area K, and Area L.