



US Army Corps
of Engineers®

ER 1110-1-8153
29 April 2016

Engineering and Design

Military Munitions Support Services Roles and Responsibilities

ENGINEER REGULATION

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Regulation
No. 1110-1-8153

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MILITARY MUNITIONS SUPPORT SERVICES
Roles and Responsibilities

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MILITARY MUNITIONS SUPPORT SERVICES
Roles and Responsibilities

1. Purpose. This regulation, in conjunction with the programmatic requirements, roles, and responsibilities established in other Engineering Regulations, Memoranda of Agreement or Understanding, and other controlling policy or guidance documents for the programs which execute Military Munitions Support Services (M2S2) activities, establishes policies and responsibilities regarding the efficient use and coordination of technical resources within the U.S. Army Corps of Engineers (USACE). The foundation of USACE environmental work is the Environmental Operating Principles as specified in ER 200-1-5.
2. Applicability. This regulation applies to all Headquarters, USACE (HQUSACE) elements and all USACE organizations involved, directly or indirectly, with projects and activities which include a military munitions component or explosives safety related issue. This document focuses on the coordination of USACE organizations for technical support of M2S2 activities.
3. Distribution. Approved for public release; distribution is unlimited.
4. References. All referenced documents may be updated periodically, thus the most recent version of the applicable reference or the document which supersedes it should be used.
 - a. DoDI 4000.19, Support Agreements.
 - b. DoDI 4715.07, Defense Environmental Restoration Program.
 - c. DoDM 4715.20, Defense Environmental Restoration Program Management.
 - d. DoD 6055.09M, DoD Ammunition and Explosives Safety Standards.
 - e. AR 385-64, U.S. Army Explosives Safety.
 - f. Deputy Assistant Secretary of the Army for Environmental Safety and Occupational Health (SAIE-ESOH) memorandum of 1 April 2009, Interim Guidance for Chemical Warfare Material Responses.
 - g. ER 5-1-10, Corps-wide Area of Work Responsibility.

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- h. ER 5-1-11, USACE Business Process.
- i. ER 10-1-22, U.S. Army Engineering and Support Center, Huntsville.
- j. ER 10-1-50, U.S. Army Corps of Engineers Environmental and Munitions Mandatory Center of Expertise.
- k. ER 200-1-5, Policy for Implementation and Integrated Application of the U.S. Army Corps of Engineers Environmental Operating Principles and Doctrine.
- l. ER 200-3-1, Formerly Used Defense Sites (FUDS) Program Policy.
- m. ER 385-1-95, Safety and Health Requirements For Munitions and Explosives Of Concern (MEC) Operations.
- n. EM 200-1-15, Technical Guidance for Military Munitions Response Actions.
- o. EM 385-1-97, Explosives Safety and Health Requirements Manual.
- p. EP 75-1-3, Recovered Chemical Warfare Materiel (RCWM) Response Process.
- q. CEMP-CE Task Force Report dated 8 March 2013, Environmental Services Transformation.
- r. CEMP-ZB Directorate Policy Memorandum dated 20 May 2013, Adherence to Mission Assignments and Alignments of Acquisitions with Missions.

5. Explanation of Abbreviations and Terms. Abbreviations/acronyms used in this regulation are explained in the Glossary.

6. Overview of Military Munitions Support Services.

a. The M2S2 activities consist of work performed by USACE involving military munitions responses or actions to address unexploded ordnance (UXO), discarded military munitions (DMM), and munitions constituents (MC), including conventional munitions and/or chemical warfare materiel (CWM), for range clearance operations, readiness support, and support services during construction, dredging and environmental activities. M2S2 also includes activities in support of Outside the Continental United States (OCONUS) missions involving munitions (such as those performed in Iraq and Afghanistan).

b. The objective of M2S2 is to ensure that M2S2 activities are performed safely, consistently, and efficiently across the executing programs. This requires effective communication among project team members; full and appropriate utilization of existing military munitions response contracts; awareness of advances in technology; and

control of total project costs. Three overarching imperatives should permeate all programs executing M2S2 work: 1) safety is the first priority, 2) quality is ensured by a trained and experienced M2S2 workforce, and 3) Project Delivery Teams (PDT), especially virtual PDTs, must be cohesive and well-coordinated. This guidance is intended to foster the institutionalization of these three imperatives within the execution of the programs which perform M2S2 activities. See Table 1.

Table 1. M2S2 Imperatives
<i>1. Safety is the first priority for all USACE M2S2 work.</i>
<i>2. Quality is ensured by a trained and experienced M2S2 workforce.</i>
<i>3. PDTs delivering M2S2 are high performing virtual teams.</i>

7. Policy.

a. The U.S. Army Corps of Engineers executes M2S2 work in accordance with applicable laws, regulations, policies, and specific program or sponsoring agency requirements. For example, Defense Environmental Restoration Program (DERP) Military Munitions Response Program (MMRP) projects will be conducted in accordance with DoDI 4715.07 Defense Environmental Restoration Program; DoDM 4715.20 Defense Environmental Restoration Program Management; (For FUDS) ER 200-3-1 Formerly Used Defense Sites Program Policy; and as supplemented in Appendix A of this regulation. In the event any conflicts arise between this guidance and the aforementioned regulations, standards, guidance or other agreements, such conflicts shall be brought to the attention of the Environmental Division, HQUSACE and the appropriate National Program Manager. HQUSACE will provide guidance on the resolution of any such potential conflicts.

b. All USACE activities will be performed in accordance with the explosive safety standards in DoD 6055.09-M DoD Ammunition and Explosives Safety Standards, AR 385-64 U.S. Army Explosives Safety, and ER 385-1-95 Safety and Health Requirements for Munitions and Explosives of Concern Operations, as applicable.

c. Elements of USACE performing reimbursable services for a customer outside of DOD or for another DOD component, must have a duly authorized and executed Memorandum of Agreement (MOA) in place to conduct that work in accordance with DoDI 4000.19. This umbrella Memorandum of Agreement between the requesting agency and USACE is to be executed at the national level and documents appropriate requirements and practices. Where there is ongoing work without an effective MOA in place, an MOA shall be executed as soon as practicable to cover such work and future activities.

d. Military Munitions Support Services work conducted outside the United States or territories shall be performed in accordance with applicable Department of Defense (DoD) and host nation requirements consistent with international agreements.

e. Program Management Plans are developed for all programs, and Project Management Plans (PMP) are utilized as the primary planning mechanism, management tool and roadmap for quality for all M2S2 work, in accordance with ER 5-1-11.

f. Project managers must engage and utilize the resources and services of an authorized Military Munitions Design Center (MMDC) in the planning and execution of USACE work where military munitions have been, will be, or are suspected to be encountered. See paragraph 14 and Appendix A. For FUDS, this policy is documented in ER 200-3-1.

g. Headquarters U.S. Army Corps of Engineers monitors workload and funding, and authorizes MSC's to establish Military Munitions Design Centers. This regulation authorizes five MMDCs; four for conventional munitions and one for CWM. For FUDS, MMDCs are discussed in ER 200-3-1. See Table 2 for contact information.

(1) The four authorized Military Munitions Design Centers for conventional munitions include: Baltimore District (CENAB); Omaha District (CENWO); South Pacific and Southwestern Divisions Range Support Center (CESPD/CESWD-RSC); and Huntsville Center (CEHNC).

Table 2. Points of Contact MM and CWM Design Centers	
Contact	Telephone Number
Baltimore District Military Munitions Design Center (MMDC)	410-962-6728
Omaha District MMDC	402-995-2736
South Pacific and Southwestern Division, Range Support Center (MMDC)	505-342-3475
Huntsville Center MMDC (Through written agreement, LRL supports the Huntsville MMDC)	256-895-1510
Chemical Warfare Materiel(CWM) Design Center (for reporting chemical events-USACE)	256-895-1598 (24hr) <u>256-895-1290 or 990-1512 (cell)</u> (Duty Hours)

(2) The MMDC for CWM is located at CEHNC. The CWM Design Center is the only Design Center authorized to execute any phase of a CWM project or to conduct associated Pre-Operational Surveys. Detailed information on the CWM Response

process is presented in EP 75-1-3 and SAIE (ESOH) Memorandum, 1 April 2009,
Subject: Interim Guidance for Chemical Warfare Materiel (CWM) Responses.

8. Organizational Structure.

a. Organizations and offices with M2S2 related functions include: HQUSACE, the Advisory Board, National Program Managers (NPMs), Divisions/RBCs, Military Munitions Design Centers (MMDC), Project Management (PM) Districts, the Engineering and Research Development Center (ERDC), and the Environmental and Munitions Center of Expertise (EM CX).

b. The roles and responsibilities of the organizational elements which are involved in M2S2 activities are described in paragraphs 9-16 below. Such M2S2 roles and responsibilities often fall within the general roles and responsibilities already established in regulation and policy defining management or execution responsibilities.

c. Authorities for Corps-wide Areas of Responsibility are defined in ER 5-1-10.

d. Funding for M2S2 activities shall be apportioned appropriately based upon the participants role and responsibility and the type of work being supported.

9. Headquarters, U.S. Army Corps of Engineers.

a. The responsibilities of HQUSACE include:

(1) Overall coordination and quality management of all programmatic activities.

(2) Development of USACE technical and safety guidance.

(3) Designation of National Program Managers.

b. The following HQUSACE organizations have primary responsibility for coordination, management, and oversight of M2S2 activities.

(1) Environmental Division. The Environmental Division is the HQUSACE organization assigned to coordinate M2S2 activities. It will be responsible for the dissemination and coordination of M2S2 specific guidance to the executing programs and with organizational elements within USACE including safety, engineering, construction, counsel, real estate, public affairs, procurement, financial management, and Army policy or defense policy elements. The Environmental Division will:

(a) Scope, review, and approve development of M2S2 specific policy, guidance, and criteria documents for programs which fall within the management of the HQUSACE Environmental Division.

(b) Coordinate M2S2 policy issues within HQUSACE and with DA and other DoD elements.

(c) Develop procedures for the periodic evaluation of USACE MM DC to ensure they maintain technical capabilities to support and execute required M2S2 functions.

(d) Designate an individual within the Environmental Division Core Team to act as the M2S2 Action Officer to accomplish the following:

- Promote coordination and collaboration for all M2S2 issues.
- Ensure implementation of this ER.
- Track M2S2 workload and trends, through coordination with USACE NPMs.
- Through coordination with the Advisory Board and NPMs, provide recommendations to Chief, Environmental Division and to USACE senior leadership on M2S2 related issues.
- Participate in meetings with USACE, DA, and other DoD organizations, regulators, stakeholders, sponsoring agencies, and contractors to stay abreast of and communicate emerging policies, issues, or concerns.
- Work with the appropriate NPM and MM DC to coordinate USACE efforts when M2S2 assistance is requested from internal and external sources.
- Identify and share best practices for creating consistency and accountability within M2S2 programs.
- Plan, coordinate, and facilitate M2S2 Advisory Board meetings and act as chair in the absence of the Environmental Division chief.
- Keep all NPMs informed of new developments, technology, issues, and Army, DoD, requesting agencies and contractor concerns regarding M2S2.
- Refer concerns about individual programs or projects to the responsible NPM.

(2) The Corps of Engineers Safety Office (CESO) is the HQUSACE point of contact for the explosives safety and occupational health program. CESO has responsibilities that include safety, occupational health, and other supporting issues related to the safe implementation and execution of the M2S2 activities under USACE management. Safety and occupational health requirements for M2S2 activities are currently specified in ER 385-1-95, Safety and Health Requirements for Munitions and Explosives of Concern (MEC) Operations, and EM 385-1-97.

10. Advisory Board. The Advisory Board serves in an advisory capacity; providing recommendations to HQUSACE on organizational policy, technical and safety issues, resource allocation, and acquisitions. The Advisory Board meets quarterly, or as directed by its Chairperson, to discuss the delivery of M2S2. The Advisory Board is composed of:

- a. Chairperson - Environmental Division Chief.
- b. Environmental Division M2S2 Action Officer.
- c. Chiefs of the five Military Munitions Design Centers.
- d. Chief, Military Munitions Division from the Environmental and Munitions Center of Expertise.
- e. Chief, DoD Environmental Programs Team
- f. Chief, Environmental Support Team
- g. Support, as needed, from NPMs, RBCs, EM CX, CESO, and ERDC.

11. Environmental and Munitions Center of Expertise. The EM CX provides a key role in quality assurance of M2S2 through its support to the programs which request the CX's services or when a program is directed by regulation or policy to seek review or concurrence of its actions. The EM CX will provide a member to serve on the M2S2 Advisory Board.

12. Divisions or Regional Business Centers. Divisions provide command and control over PM Districts executing programs with M2S2 activities within their Area of Responsibility (AOR). Divisions also maintain command and control over authorized MMDC's within their organizational structure. ER 5-1-10 will be followed by all USACE elements when asked to perform work outside their AORs. Divisions will monitor and coordinate District activities to ensure compliance with the Military Directorate Policy Memorandum; Adherence to Mission Assignments and Alignment of Acquisitions with Missions dated 20 May 2013 and subsequent revisions. They will ensure Districts are sustaining any local M2S2 resources used to fulfill the mandatory, technical, or support functional roles on M2S2 work (refer to Appendix B), monitor activities to ensure MMDCs are involved in projects as required, and ensure technical resources of an MMDC are included in PDTs as required or appropriate. Roles and responsibilities relative to FUDS are contained in ER 200-3-1.

13. U.S. Army Engineering and Support Center, Huntsville. In addition to sustaining a conventional MMDC and CWM DC in accordance with ER 10-1-22, the Huntsville Center serves as the:

- a. National Program Management (NPM) and execution agent for military munitions support to the Army's Sustainable Range Program per AR 350-19.
- b. National Program Manager for USACE M2S2 international contingency operations in support of U.S. and allied forces outside of the U.S. and its territories.
- c. Range and Training Lands Mandatory Center of Expertise.

14. Military Munitions Design Centers. Authorized MMDCs provide project planning and execution services to the PM Districts. The MMDCs are required to be involved in the following types of non-DERP activities, or their functional equivalent, that are common to all projects: historical records review, site surveys, probability assessments, required explosives safety submissions, engineering controls design, scope/specifications development, independent government estimate, proposal evaluations, technical review of project submittals, field inspection and oversight, and MMDC reports and documentation review. The MMDCs are also required to be included in specific investigation and design phases of DERP munitions response projects as described in Appendix A. The MMDCs will:

- a. Maintain qualified technical resources needed to support PM Districts for M2S2 related activities.
- b. Assign an M2S2 qualified Technical Lead (Technical Manager) to the PDT to coordinate and provide technical services during any M2S2 activity.
- c. Provide M2S2 qualified personnel as part of the PDT for the execution of M2S2 activities.
- d. Sustain M2S2 technical capabilities and contract capacities as necessary to fulfill the responsibilities of a MMDC and any HQUSACE approved mission assignments. Acquire contracts for M2S2 needed to support PM Districts and coordinate individual project contract needs and administration with client PM Districts.
- e. Publish an MMDC Management Plan that explains how the design center is organized, funded, identifies key personnel, and establishes the MMDC's plans and objectives. The plan shall clearly address the topics of recruitment, training, acquisitions, safety, quality management, stakeholder engagement, lines of communication, and teaming arrangements at a minimum. The plan shall be reviewed and updated at least biennially.
- f. Provide a member to serve on the M2S2 Advisory Board.
- g. MMDC Technical Lead (or Technical Manager). The Technical Lead is responsible for coordinating M2S2 related aspects of safety, quality, and acquisitions in support of the PM. The Technical Lead:

- (1) Provides recommendations to the PM for the assignment of M2S2 qualified personnel to the PDT.
- (2) Provides input to the PMP on M2S2 related aspects of the work.
- (3) Coordinates the technical activities of the mandatory, technical, and support functional roles on the PDT for the delivery of M2S2 work.
- (4) In conjunction with the PDT, develops and implements the project Quality Assurance Surveillance Plan (QASP).
- (5) Contacts SMEs at the EM CX as necessary to address M2S2 related questions and issues as they arise. Recommends to the PM when M2S2 related work products should be submitted to the EM CX for independent technical review as required by specific program policy or as necessary to achieve the project objectives.

15. Project Management Districts. The PM District serves as the overall manager for the lifecycle of assigned projects and assigns a qualified PM to manage the project. PM Districts are responsible for the delivery of M2S2 within its AOR or as assigned by program specific policy. Roles and responsibilities relative to FUDS are contained in ER 200-3-1. PM Districts will:

- a. Assign qualified project managers. The PM will be qualified (see Appendix B) when munitions response is the primary objective for the project.
- b. Utilize the technical services of an authorized MMDC for M2S2 related activities (see paragraph 14 and Appendix A). In coordination with the MMDC, develop and approve a PMP in accordance with ER 5-1-11, documenting concurrence of the PMP by the supporting MMDC. This includes definition of project goals and exit strategy, as coordinated with the sponsoring agency.
- c. Ensure qualified personnel (See Appendix B) are an integral part of the PDT for the execution of M2S2 project activities. In addition to the PM, at a minimum, the PDT will consist of a qualified Technical Lead, and an Ordnance and Explosives Safety Specialist (OESS). Other technical and support functional roles requirements are defined in Appendix B.
- d. Led by the Project Manager, the PDT is responsible for project success and is empowered to make project decisions within the bounds of the approved PMP. The District PM:
 - (1) Performs all project manager functions as required by ER 5-1-11, the USACE Project Management Business Process, and any program specific policy and guidance.
 - (2) Forms the PDT with qualified personnel using concepts of virtual teaming as necessary to meet all project requirements for safety, quality, and acquisitions.

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(3) Must utilize qualified personnel from a MMDC unless the PM and MMDC Technical Lead agree otherwise.

(4) Leads the PDT in developing the PMP and is responsible for obtaining input from the PDT and resource providers and their commitment to the PMP. For M2S2 work, the PMP incorporates information on the delivery of M2S2 with input from the supporting MMDC; includes the names of all PDT members filling the mandatory, technical, and support functional roles; and provides information necessary for the successful performance of the virtual team in terms of safety, quality, acquisitions (including PWS/SOW development), and communications. The M2S2 related aspects of the PMP should be reviewed and updated at least annually.

(5) Contacts SMEs at the EM CX as necessary to assist with M2S2 related questions and issues as they arise. Ensures that all M2S2 related work products are submitted to the EM CX for independent technical review as required by specific program policy or as necessary to achieve the project objectives.

(6) Elevates any M2S2 related issues for resolution as needed.

16. Engineer Research and Development Center. The ERDC:

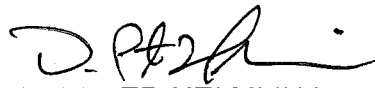
a. Conducts research, development, test, and evaluation (RDT&E) activities in support of M2S2 and operational range sustainment activities.

b. Provides SME technical assistance to USACE organizations on M2S2 related RDT&E topics as requested.

17. Project Delivery Team Member Qualifications. To better define and promote development of qualified PDT members, Appendix B contains a table indicating knowledge/training/experience desired of the functional disciplines typically assigned to address the M2S2 related aspects of a project. Appendix B serves as a reference for PMs to consider when evaluating potential PDT candidates and can also be used by individuals and supervisors to foster career development.

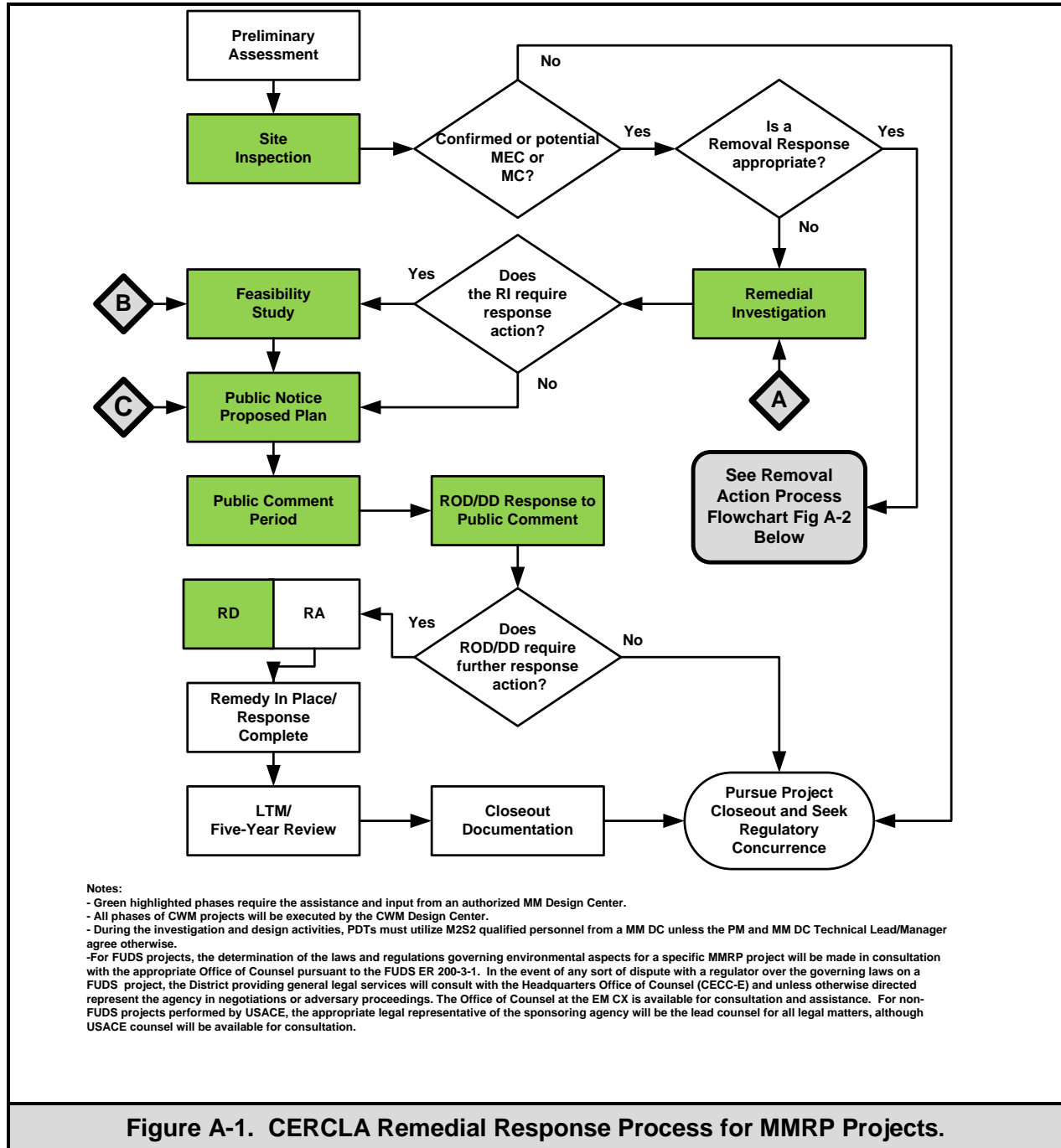
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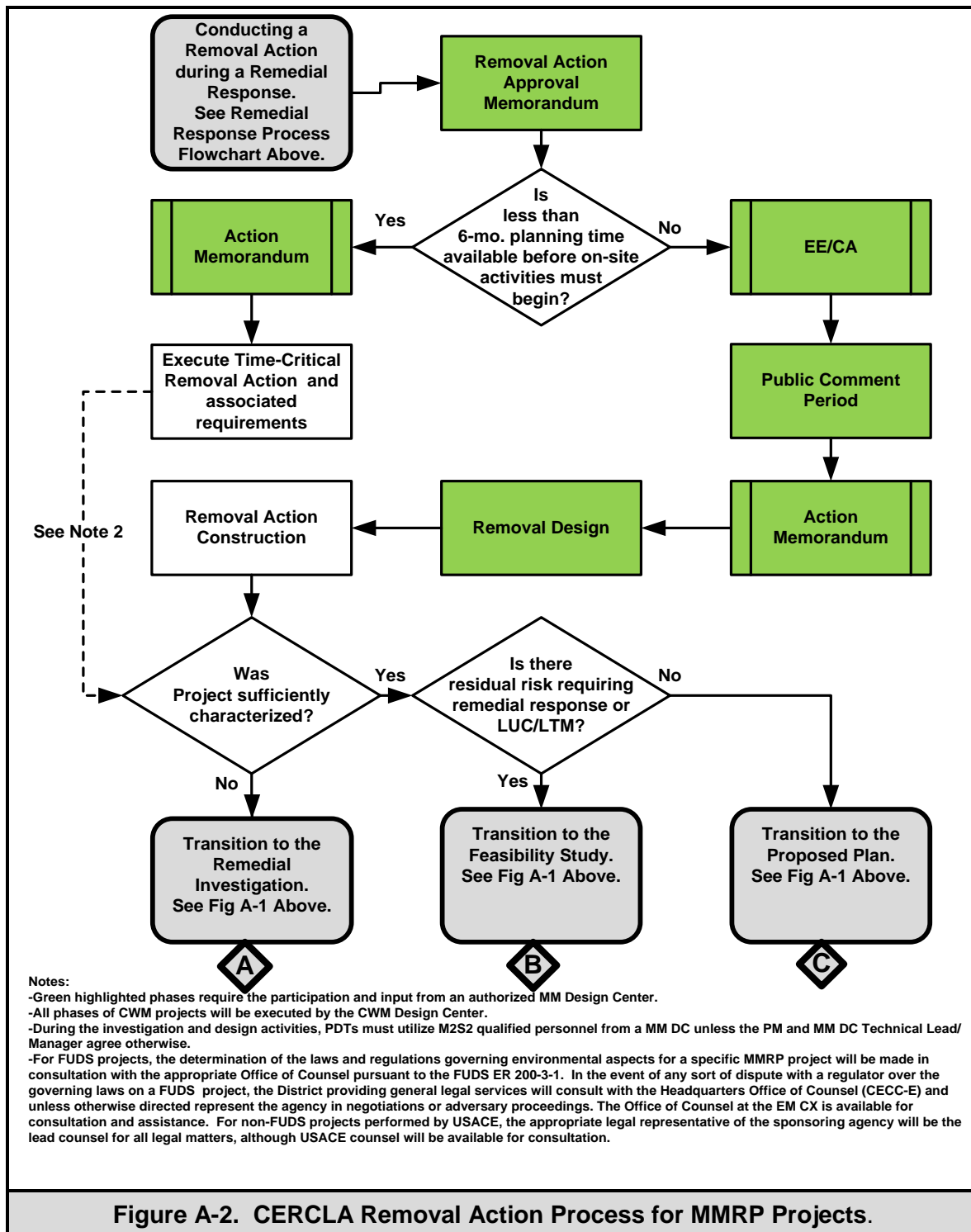
2 Appendices
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APPENDIX A

Military Munitions Response Program Investigation and Design Activities
Requiring MMDC Involvement





Comparable Phases of the Remediation Process – Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA) are the two main Federal Statutes under which remediation of contaminated properties occurs. CERCLA is the preferred regulatory framework under DERP to conduct MMRP munitions response projects, however, where RCRA Corrective Actions have been implemented, RCRA may apply. The table below provides a crosswalk of comparable CERCLA and RCRA phases and should be used in conjunction with Figures A-1 and A-2 to identify project phases requiring MMDC engagement.

Table A-1. CERCLA/RCRA Phase Comparison

	CERCLA	RCRA
Record search	Preliminary Assessment (PA)	RCRA Facility Assessment (RFA)
Sampling to confirm or refute	Site Inspection (SI)	No direct equivalent. However, there is an optional phase known as “Phase I RFI” or “Release Assessment” that can be used to determine whether interim/stabilization measures are needed and/or to focus the RFI.
Determining nature and extent of contamination	Remedial Investigation (RI)	RCRA Facility Investigation (RFI)
Evaluate alternatives	Feasibility Study (FS)	Corrective Measures Study (CMS)
Proposed action	Proposed Plan (PP)	Statement of Basis (or Fact Sheet)
Decision document	Record of Decision (ROD)	Permit modification or responses to comments (RTC)
Action Implementation	Remedial Design/Remedial Action (RD/RA)	Corrective Measures Implementation (CMI)
Interim action (can occur at any point in the process)	Removal Action (Time Critical or non-Time Critical)	Interim/Stabilization Measure (ISM)

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APPENDIX B

Project Delivery Team Member Qualifications

The following tables list the types of expertise needed to successfully execute M2S2 work. The tables are divided into 3 categories; Mandatory PDT members, Technical Support PDT members, and Additional Functional Support. Each Table lists typical functional roles, or disciplines, that make up PDTs, their general role on a PDT and the preferred Knowledge/Training/Experience an individual should have in order to be considered qualified to perform that function. Junior staff with no, or little, M2S2 related Knowledge/Training/Experience can be assigned to M2S2 PDTs but are expected to work under the stewardship and tutelage of more experienced/qualified personnel. Individuals and supervisors can use these tables to help plan and promote career development.

Mandatory Functional Roles – The mandatory disciplines shown below are always required on the PDT when executing military munitions related aspects of projects. These functions may be modified or combined depending on the scope of sponsoring agency requirements and complexity of the project.

Table B-1. Mandatory PDT Members

Discipline	Roles/Responsibilities	Qualified PDT Members will have some combination of Knowledge/Training/Experience in the topics shown here depending on type and complexity of the work to be performed.
Project Manager	Assigned to achieve the project objectives where delivery of a MMRP project is the primary goal; manages scope, schedule, quality, and budget while leading the PDT. Note: If primary goal is other than a MMRP project (e.g., construction, dredging, HTRW, etc.), project manager must meet organizational and program specific qualifications required to manage scope, schedule, quality and budget.	MMRP Principles & Practices CERCLA & RCRA Concepts Systematic Project Planning (TPP, UFP QAPP, DQO) Explosives Safety Concepts DoD & Service Regulations & Policies Utilization of Historical Records and Common Operations Reports MRSP Process including Delineation MEC Hazard Assessments Basic Geophysics Concepts Basic Munitions Constituent Concepts Green and Sustainable Remediation

Discipline	Roles/Responsibilities	Qualified PDT Members will have some combination of Knowledge/Training/Experience in the topics shown here depending on type and complexity of the work to be performed.
Technical Lead	Coordinates all M2S2 related technical activities in support of the PM and PDT with a focus on safety, quality, and acquisitions.	CERCLA & RCRA Concepts Systematic Project Planning (TPP, UFP QAPP, DQO) MMRP Principles & Practices Utilization of Historical Records and Common Operations Reports DoD & Service Regulations & Policies Explosives Safety Concepts Geophysics Concepts Munitions Constituent Concepts MRSPP Process including Delineation MEC Hazard Assessments Munitions Classification Concepts Interim Risk Management Incremental Sampling Methodology Chemical Data Quality Management Green and Sustainable Remediation
Ordnance and Explosives Safety Specialist (OESS)	Ensures the safe delivery of M2S2 IAW all DoD, Army, and USACE explosives safety requirements including the MEC probability assessment, required explosives safety submissions, review of contractor qualifications and document submittals, quality assurance functions during field operations as defined in the QASP, and facilitates and supports EOD and emergency response personnel as required.	Minimum training requirements as established in DDESB TP 27 and DA PAM 385-64 Systematic Project Planning (TPP, UFP QAPP, DQO) MMRP Principles & Practices Utilization of Historical Records and Common Operations Reports CERCLA & RCRA Concepts MRSPP Process including Delineation MEC Hazard Assessments Munitions Classification Concepts

Technical Functional Roles – The technical disciplines shown below are required on the PDT when delivering these specific technical functions in support of a military munitions project. These tables are intended to identify M2S2 competencies rather than provide a list of specific courses or training providers. Competency can be achieved from a combination of demonstrated knowledge, training, and/or experience.

Table B-2. Technical Functional Roles (as needed)

Discipline	Roles/Responsibilities	Qualified PDT Members will have some combination of Knowledge/Training/Experience in the topics shown here depending on type and complexity of the work to be performed.
Geophysicist	Provides technical expertise and quality oversight of all geophysical activities during project planning, acquisitions, field operations, data submissions, and reporting.	Advanced Geophysical Principles Geophysical Systems Verification MEC Geophysical Software Munitions Classification Concepts Explosives Safety Concepts Systematic Project Planning (TPP, UFP QAPP, DQO) MMRP Principles & Practices CERCLA & RCRA Concepts Munitions Classification Applications Utilization of Historical Records and Common Operations Reports
Chemist	Provides technical expertise and quality oversight of all chemistry activities during project planning, acquisitions, field operations, data submissions, and reporting.	Advanced Chemistry Principles Advanced Munitions Constituents Chemical Data Quality Management Explosives Safety Concepts Systematic Project Planning (TPP, UFP QAPP, DQO) MMRP Principles & Practices CERCLA & RCRA Concepts Incremental Sampling Methodology Utilization of Historical Records and Common Operations Reports
Risk Assessor	Provides technical expertise and quality oversight of all risk assessment activities during project planning, acquisitions, field operations, data submissions, and reporting.	Human Health Risk Assessments Ecological Risk Assessments MEC Hazard Assessments Explosives Safety Concepts Systematic Project Planning (TPP, UFP QAPP, DQO) Basic Munitions Constituent Concepts MMRP Principles & Practices Utilization of Historical Records and Common Operations Reports CERCLA & RCRA Concepts Chemical Data Quality Management MRSP Process including Delineation Advanced Munitions Constituents Incremental Sampling Methodology
Geologist/ Hydrologist/ Hydrogeologist	Provides technical expertise and quality oversight of all geologic/hydrologic/hydrogeologic activities during project planning, acquisitions, field operations, data submissions, and reporting.	Advanced Geology Principles, or Advanced Hydrologic Principles, or Advanced Hydrogeologic Principles Surface/Subsurface Characterization Explosives Safety Concepts Systematic Project Planning (TPP, UFP QAPP, DQO) MMRP Principles & Practices CERCLA & RCRA Concepts Chemical Data Quality Management Basic Geophysics Concepts Basic Munitions Constituent Concepts Munitions Classification Concepts Incremental Sampling Methodology

Discipline	Roles/Responsibilities	Qualified PDT Members will have some combination of Knowledge/Training/Experience in the topics shown here depending on type and complexity of the work to be performed.
Regulatory Specialist	Provides technical expertise to ensure that all project activities are performed in compliance with all applicable regulatory requirements.	MMRP Principles & Practices Utilization of Historical Records and Common Operations Reports CERCLA & RCRA Concepts Federal Regulations Concepts DoD & Service Regulations & Policies Selection of ARARs Explosives Safety Concepts Systematic Project Planning (TPP, UFP QAPP, DQO) Basic Geophysics Concepts Basic Munitions Constituent Concepts
Environmental/Chemical/ Civil Engineer	Provide technical expertise and quality oversight all project engineering activities during project planning, acquisitions, treatment technology evaluation, design submissions, operations optimization, and reporting.	Environmental Engineering Principles MC Treatment Processes/Systems Explosives Safety Concepts Green and Sustainable Remediation Systematic Project Planning (TPP, UFP QAPP, DQO) MMRP Principles & Practices CERCLA & RCRA Concepts Basic Geophysics Concepts Munitions Classification Concepts Basic Munitions Constituent Concepts
Industrial Hygienist	Ensures the safe delivery of M2S2 IAW all Federal, DoD, Army, and USACE safety and occupational health requirements including the assessment of site and activity hazards, and application of appropriate industrial hygiene controls, review of contractor qualifications and document submittals, proper selection and implementation of PPE, monitoring, and engineering controls.	Industrial Hygiene Principles as Applied to Cleanup Operations Application of OSHA's HAZWOPER Standard (29 CFR 1910.120) to M2S2 General Construction Safety Principles Explosives Safety Concepts Basic Geophysics Concepts Basic Munitions Constituent Concepts

Support Functional Roles – The supporting disciplines shown below are needed on the PDT when delivering these specific support functions. These tables are intended to identify M2S2 suggested competencies rather than provide a list of specific courses or training providers. The table is intended to provide guidance and consideration in staffing a PDT and to promote career development.

Table B-3. Support Functional Roles (as needed)

Discipline	Roles/Responsibilities	Qualified PDT Members will have some combination of Knowledge/Training/Experience in the topics shown here depending on type and complexity of the work to be performed.
Attorney	Provides legal support as needed to the PM and PDT.	MMRP Principles & Practices CERCLA & RCRA Concepts Federal Regulations Concepts DoD & Service Regulations & Policies
Public Affairs Specialist	Provide public affairs support as needed to the PM and PDT.	MMRP Principles & Practices Explosives Safety Concepts Basic Geophysics Concepts Basic Munitions Constituent Concepts
Cost Engineer/ Estimator	Provide cost estimating support as needed to the PM and PDT.	MMRP Principles & Practices CERCLA & RCRA Concepts Basic Geophysics Concepts Basic Munitions Constituent Concepts Munitions Classification Concepts
Contracting Officer	Serve as Contracting Officer when a M2S2 related contract is needed.	MMRP Principles & Practices Explosives Safety Concepts
Contracting Officer's Representative (COR)	Serve as COR when a M2S2 related contract is needed.	MMRP Principles & Practices CERCLA & RCRA Concepts Systematic Project Planning (TPP, UFP QAPP, DQO) Explosives Safety Concepts Basic Geophysics Concepts Basic Munitions Constituent Concepts Munitions Classification Concepts
Contracting Specialist	Provide contracting support as needed to the PM and PDT.	MMRP Principles & Practices Explosives Safety Concepts
Real Estate Specialist	Provide real estate support as needed to the PM and PDT.	MMRP Principles & Practices

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GLOSSARY

Section I Abbreviations and Acronyms

AOR	Area of responsibility
AR	Army Regulation
CEMP	Corps of Engineers Military Programs
CENAB	Baltimore District
CENWO	Omaha District
CESO	Corps of Engineers Safety Office
CESPD	South Pacific Division
CESWD	Southwestern Division
CWM	chemical warfare materiel
DA	Department of the Army
DERP	Defense Environmental Restoration Program
DMM	discarded military munitions
DoD	Department of Defense
DRU	direct reporting unit
EM	Engineer Manual
EP	Engineer Pamphlet
EM CX	Environmental and Munitions Center of Expertise
ER	Engineer Regulation
ERDC	Engineering and Research Development Center
HQ USACE	Headquarters, U.S. Army Corps of Engineers
M2S2	Military Munitions Support Services
MC	munitions constituents
MEC	munitions and explosives of concern
MMDC	Military Munitions Design Center
MMRP	Military Munitions Response Program
NPM	National Program Manager
OCONUS	outside the continental United States
OESS	Ordnance and Explosives Safety Specialist
PDT	project delivery team
PgMP	Program Management Plan
PM	Project Management
PMP	project management plan
POC	point of contact
PWS	Performance Work Statement
QASP	quality assurance surveillance plan

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RAD	Remedial Action District
RDT&E	research, development, test, and evaluation
RESS	required explosives safety submissions
RSD	Range Support Center
SAIE-ESOH	Deputy Assistant Secretary of the Army for Environmental Safety and Occupational Health
SME	Subject Matter Expert
SOW	Scope of Work
USACE	U.S. Army Corps of Engineers
UXO	unexploded ordnance

Section II
Terms

This section contains no entries.

Section III

Special Abbreviations and Terms
This section contains no entries.