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CEMP-CED

Engineering and Design Military Munitions Support Services Roles and Responsibilities

FOR THE COMMANDER:

DAMON A. DELAROSA
COL, EN
Chief of Staff

Purpose. This regulation, in conjunction with the programmatic requirements, roles, and responsibilities established in other Engineer Regulations, Memorandum of Agreement or Understanding, and other controlling policy or guidance documents for the programs which execute Military Munitions Support Services activities, establishes policies and responsibilities regarding the efficient use and coordination of technical resources within the United States Army Corps of Engineers. The foundation of United States Army Corps of Engineers environmental work is the Environmental Operating Principles as specified in Engineer Regulation 200-1-5.

Applicability. This regulation applies to all Headquarters, United States Army Corps of Engineers elements and all United States Army Corps of Engineers organizations involved, directly or indirectly, with projects and activities which include a munitions and explosives of concern component regardless of requiring agency or component. This document focuses on the coordination of United States Army Corps of Engineers organizations for technical support of Military Munitions Support Services activities involving munitions and explosives of concern.

Distribution statement. Approved for public release; distribution is unlimited.

Proponent and exception authority. The proponent of this regulation is the CEMP-CED. The proponent has the authority to approve exceptions or waivers to this regulation that are consistent with controlling law and regulations. Only the proponent of a publication or form may modify it by officially revising or rescinding it.

*This regulation supersedes ER 1110-1-8153, dated 15 October 2020.

SUMMARY of CHANGE

ER 1110-1-8153

Military Munitions Support Services Roles and Responsibilities

This revision, dated 5 May 2025:

- Establish new requirement in paragraph 1-15c hiring of Ordnance and Explosives Safety Specialists personnel at a project management district not aligned with a designated military munitions design center requires prior approval from the Military Munitions Support Services Advisory Board.
- Updated paragraph 1-7e to include conducting munitions and explosives of concern probability assessments to support the environmental analysis required in DD Form 1391 (Tab J) (see DA PAM 420-1-2).
- Added new references:
AR 420-1, Army Facilities Management.
DA Pam 420-1-2, Army Military Construction and Nonappropriated-Funded Construction Program Development and Execution.
Formerly Used Defense Site Handbook.
- Deleted Comprehensive Emergency Response, Compensation, and Liability Act process flowcharts and crosswalk between Comprehensive Emergency Response, Compensation, and Liability Act and Resource Conservation and Recovery Act as Appendix A. Appendix A is now listed as References.
- Updated Appendixes B adding a Geospatial Information System Specialist and updating training requirements. Added reference to examples of mentoring checklists at <https://team.usace.army.mil/sites/HQ-MP/PDT/M2S2/default.aspx>.

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Chapter 1

Introduction

1–1. Purpose

This regulation, in conjunction with the programmatic requirements, roles, and responsibilities established in other Engineer Regulations (ERs), 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.

1–2. Distribution statement

Approved for public release; distribution is unlimited.

1–3. References

See Appendix A.

1–4. Records management (recordkeeping) requirements

The records management requirement for all record numbers, associated forms, and reports required by this publication are addressed in the Army Records Retention Schedule. Detailed information for all related record numbers is located on the USACE Records Management Site <https://usace.dps.mil/sites/INTRA-CIOG6/SitePages/Records-Management.aspx>. If any record numbers, forms, and reports are not current, addressed, and/or published correctly, see DA Pam 25-403 for guidance.

1–5. Associated publications

This section contains no entries.

1–6. 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, and munitions constituents, including conventional munitions and/or chemical warfare materiel, for range clearance operations, readiness support, explosives contaminated facilities, and support services during construction, dredging and environmental activities. M2S2 also includes activities in support of Outside the Continental United States 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. Where USACE performs work for another agency or component, it is important to remember that the agency who has the responsibility for the work will lead and interact with outside parties such as regulators and the public. USACE will provide services which are consistent with all safety, legal, and policy requirements in supporting those other agencies or components.

c. 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 1–1.

Table 1–1
Military Munitions Support Services Imperatives

- | |
|--|
| 1. Safety is the first priority for all USACE M2S2 work. |
| 2. Quality is ensured by a trained and experienced M2S2 workforce. |
| 3. PDTs delivering M2S2 are high-performing virtual teams. |
-

1–7. Policy

a. USACE executes M2S2 work according to 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 line with Department of Defense Instruction (DoDI) 4715.07 Department of Defense Manual (DoDM) 4715.20 (such as, Formerly Used Defense Sites [FUDS] ER 200-3-1, , and the FUDS Handbook). In the event any conflicts arise between this guidance and the referenced regulations, standards, guidance, or other agreements; such conflicts will be brought to the attention of the Environmental Division, Headquarters (HQ)USACE and the appropriate National Program Manager (NPM). HQUSACE will provide guidance on the resolution of any such potential conflicts. For all issues associated with USACE responsible programs (such as, FUDS) or services requiring USACE activities (for example, contracting), the Office of Counsel will be consulted on all legal matters, including the application of laws and regulations.

b. Elements of USACE performing reimbursable services to Department of Defense (DoD) and non-DoD entities will follow the guidance provided in ER 1140-1-211.

c. M2S2 work conducted outside the United States or territories will be performed according to applicable DoD and host nation requirements consistent with international agreements.

d. Program Management Plans (PMPs) are developed for all programs, and PMPs are utilized as the primary planning mechanism, management tool and roadmap for quality for all M2S2 work, according to ER 5-1-11.

e. Districts are required to utilize the services of a Military Munitions Design Center (MMDC) for work that involves the potential to encounter munitions and explosives of concern (MEC), to include planning, procurement, and execution. Planning for, and execution of MMRP projects, Military Construction and Civil Works contracts by USACE that may include incidental MEC scope must be coordinated through a MMDC Chief. This includes conducting MEC probability assessments to support the environmental analysis required in DD Form 1391 (Tab J) (see DA PAM 420-1-2).

f. Districts must engage and utilize the technical resources and services of an authorized MMDC in the planning and execution of USACE work where military munitions have been, will be, or are suspected to be encountered. See paragraph 1-15.

g. Districts are required to keep NPMs informed on the status of MMRP projects and identify which MMDC is involved.

h. HQUSACE authorizes or establishes MMDCs for the purpose of ensuring the three imperatives are achieved for the delivery of M2S2 across all programs and projects. Therefore, all USACE organizations conducting M2S2 activities must engage the services of a MMDC. This regulation authorizes five MMDCs, four for conventional munitions and one for Chemical Warfare Materiel (CWM). See Table 1–2 for contact information.

(1) The four authorized MMDCs 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).

(2) The MMDC for CWM is located at CEHNC. The CWM Design Center is the only Design Center authorized to contract for or execute any phase of a CWM response project or to conduct associated Preoperational Surveys. Districts will not perform activities involving any Chemical Agent Identification Sets (CAIS) or Chemical Agent Contaminated Media (CACM).

(3) As defined in 32 CFR 179.3, CWM are items “generally configured as a munition containing a chemical compound that is intended to kill, seriously injure, or incapacitate a person through its physiological effects. CWM includes V- and G-series nerve agents or H-series (mustard) and L-series (lewisite) blister agents in other-than-munition configurations; and certain industrial chemicals (such as, hydrogen cyanide [AC], cyanogen chloride [CK], or carbonyl dichloride [called phosgene or CG]) configured as a military munition. Due to their hazards, prevalence, and military unique application, CAIS are also considered CWM.

(4) CWM does not include riot control devices, chemical defoliants and herbicides, industrial chemicals (for example, AC, CK, or CG) not configured as a munition, smoke and other obscuration-producing items, flame and incendiary producing items, or soil, water, debris or other media contaminated with low concentrations of chemical agents (CAs) where no CA hazards exist.”

(5) When encountering these items, districts are required to seek support from the CWM Design Center in Huntsville. A Munitions Response Site that is known or suspected to contain CWM or CAIS is referred to as a CWM site. A munitions response at a CWM site is referred to as a CWM response.

Table 1–2
Points of Contact for Military Munitions and Chemical Warfare Materiel Design Centers

Contact	Telephone Number	Email Contact
Baltimore District MMDC	410-962-2207	baltimoredistrictemdc@usace.army.mil
Omaha District MMDC	402-995-2736	TDL-CENWO-PMH-MMDC@usace.onmicrosoft.com
South Pacific and Southwestern Division, Range Support Center MMDC	505-506-8699	RangeSupportCenter@usace.army.mil
Huntsville Center MMDC (Through written agreement, LRL supports the Huntsville MMDC)	256-895-1238	CEHNC-MMDC Spt@usace.army.mil
CWM Design Center (for reporting chemical events-USACE)	256-655-0236 (24hr) Voicemail only 256-655-0236 or 256-424-1925 (Duty Hours)	DLL-CEHNC-CWMDC Spt@usace.onmicrosoft.com

(6) Army policy authorizes the handling, storage, and treatment of certain CAIS as hazardous material after it has been positively identified using non-intrusive means to determine if it is CA or industrial compounds. Soil, water, debris, or other media contaminated with low concentrations of CA are not CWM provided no CA hazards exist from these materials. Health-based environmental safety concentrations (HBESCs) are used to determine if a CA hazard exists in CACM. HBESCs are concentrations of individual CA in environmental media, which, if not exceeded, are unlikely to present a human health hazard for specific exposure scenarios.

(7) The Engineering and Support Center's Environmental and Munitions Mandatory Center of Expertise (EM CX) will review all FUDS MMRP acquisition packages for all base contracts and task orders according to FUDS policy.
Organization and Personnel.

Chapter 2

Organization and Personnel

2-1. Organizational structure

- a. Organizations and offices with M2S2-related functions include: HQUSACE, the Advisory Board, NPMs, Divisions/Regional Business Centers (RBC), MMDCs, Project Management Districts, the Engineer and Research Development Center (ERDC), and EM CX.
- b. The roles and responsibilities of the organizational elements which are involved in M2S2 activities are described in paragraphs 1-9 thru 1-16. 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 USACE-wide Areas of Responsibility are defined in ER 5-1-10.
- d. Funding for M2S2 activities will be apportioned appropriately based on the participants role and responsibility and the type of work being supported.

2-2. Headquarters, U.S. Army Corps of Engineers

The responsibilities of HQUSACE include overall coordination and quality management of all programmatic activities, development of USACE technical and safety guidance, and designation of NPMs. The following HQUSACE organizations have primary responsibility for coordination, management, and oversight of M2S2 activities:

- a. The Environmental Division is the HQUSACE organization assigned to coordinate M2S2 activities. It is 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:
 - (1) 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.
 - (2) Coordinate M2S2 policy issues within HQUSACE and with Department of Army (DA) and other DoD elements.
 - (3) Develop procedures for the periodic evaluation of USACE MMDC to ensure they maintain technical capabilities to support and execute required M2S2 functions.
 - (4) Designate an individual within the Environmental Division to act as the M2S2 Action Officer to accomplish the following:
 - (a) Promote coordination and collaboration for all M2S2 issues.

- (b) Ensure implementation of this ER.
 - (c) Track M2S2 workload and trends, through coordination with USACE NPMs.
 - (d) Through coordination with the Advisory Board and NPMs, provide recommendations to Chief, Environmental Division and to USACE senior leadership on M2S2-related issues.
 - (e) 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.
 - (f) Work with the appropriate NPM and MMDC to coordinate USACE efforts when M2S2 assistance is requested from internal and external sources.
 - (g) Identify and share best practices for creating consistency and accountability within M2S2 programs.
 - (h) Plan, coordinate, and facilitate M2S2 Advisory Board meetings and act as chair in the absence of the Environmental Division Chief.
 - (i) Keep all NPMs informed of new developments, technology, issues, and Army, DoD, requesting agencies and contractor concerns regarding M2S2.
 - (j) Refer concerns about individual programs or projects to the responsible NPM.
 - (k) Be the Environmental Division advocate for Command Service Executive validation for M2S2 acquisitions in coordination with NPMs.
- b. The Corps of Engineers Safety Office (CESO) is the HQUSACE point of contact for the explosive's 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 Operations and Activities Involving MEC Operations, and Engineer Manual (EM) 385-1-97.
- c. The Office of the Chief Counsel will provide legal advice and advise on the application of laws and regulations for USACE activities.

2–3. 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 MMDCs.
- d. Chief, Military Munitions Division from the EM CX.
- e. Chief, DoD Environmental Programs Branch.
- f. Chief, Environmental Support Branch.
- g. Support, as needed, from NPMs, RBCs, EM CX, CESO, HQ USACE Office of Counsel, and ERDC.

2–4. Environmental and Munitions Mandatory Center of Expertise

The EM CX provides a key role in quality assurance of M2S2 through its support to the programs which request 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.

2–5. Divisions or Regional Business Centers

a. ER 5-1-10 will be followed by all USACE elements when asked to perform work outside their area of responsibility (AORs). Divisions will monitor and coordinate District activities to ensure compliance with USACE Policy Notice CEMP 770-1-1, USACE Enterprise and Regional Acquisitions, 30 April 2022.

b. Divisions 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 and contracting resources of an MMDC are included in PDTs as required or appropriate, using the appropriate appropriations for the mission being served.

c. Additionally, RBCs should adhere to the HQ USACE Directorate of Military Programs (CEMP-CE) Memorandum, 5 May 2019, Subject: Environmental Division (ENV DIV, CEMP-CE) Process for Endorsement of Command Service Executive Validation Proposals for Environmental Program Acquisitions. This allows the Environmental Division to be the advocate for RBC acquisitions that have been accounted for in the RBCs Regional Environmental Acquisition Management Plans.

d. With respect to funding contract pre-award costs and minimum guarantees, RBCs should ensure that district offices adhere to HQ USACE Directorate of Resource Management (CERM-F) Memorandum 2019-43, 26 June 2019, Subject: Updated Accounting Policy for a Single/Multiple Award Task Order Contracts (SATOC/MATOC). Both documents are posted on the M2S2 SharePoint site at:
<https://team.usace.army.mil/sites/HQ-MP/PDT/M2S2/default.aspx>.

2–6. U.S. Army Engineering and Support Center, Huntsville

Sustains a conventional MMDC and CWM Design Center according to ER 10-1-22. The Huntsville Center is also assigned:

- a. Specified mission assignments for military munitions support to the Army's Sustainable Range Program per Army Regulation (AR) 350-19.
- b. Specified mission assignments 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.

2–7. Military Munitions Design Centers

Authorized MMDCs provide project planning, procurement, and execution services to the Project Management Districts. Districts are required to utilize the services of an MMDC for work that involves the potential to encounter munitions, to include planning, procurement, and execution. This work can include historical records review, site surveys, MEC 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 will provide all personnel to fulfill the mandatory functional roles as defined in Appendix B, Table B–1, except for the Project Manager (PM). The PM resides in the PM District. See PM District roles below for other exceptions. The MMDCs will:

- a. Maintain qualified technical resources and contracting vehicles needed to support PM Districts for M2S2-related activities.
- b. Assign an M2S2 qualified Technical Lead to the PDT to coordinate and provide technical services during any M2S2 activity. The Technical Lead is responsible for coordinating M2S2-related aspects of safety, quality, and acquisitions in support of the PM. The Technical Lead:
 - (1) Has the training and experience to fulfill one of the mandatory PDT disciplines identified in Table B–1.
 - (2) Coordinates with MMDC resource providers and the District PM for the assignment of M2S2 qualified personnel to the PDT.
 - (3) Provides input to the PMP on M2S2-related aspects of the work.
 - (4) Coordinates the technical activities of the mandatory, technical, and support functional roles/disciplines on the PDT for the delivery of M2S2 work.
 - (5) In conjunction with the PDT, develops and implements the project Quality Assurance Surveillance Plan (QASP).

(6) Ensures the overall quality of project documents and that appropriate PDT members are involved in project planning, document preparation and technical review.

(7) Contacts Subject Matter Experts (SMEs) at the EM CX as necessary to address M2S2-related questions and issues as they arise, including resolution of regulatory issues and comments or USACE independent technical review comments. 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. Where the mission is outside of a USACE delegated mission, any exchanges with regulatory agencies of final decisions on courses of action lie with the agency seeking USACE service. USACE review of such matters are advice to the agency; however, USACE will determine safety protocol for any matters in which USACE personnel or contractors are involved.

c. Provide M2S2 qualified personnel to perform the mandatory (other than PM) and technical functional roles (Appendix B) as part of the PDT for the execution of M2S2 activities.

d. Sustain M2S2 technical capabilities and maintain contract capacities as necessary to fulfill the responsibilities of a MMDC and any HQUSACE approved mission assignments. Contracting Officer and Contracting Officer Representative functions will reside at the supporting MMDC unless agreed to otherwise.

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 will clearly address the topics of recruitment, training, acquisitions, safety, quality management, stakeholder engagement, lines of communication, and teaming arrangements at a minimum. The plan will be reviewed and updated at least biennially.

f. Provide a member to serve on the M2S2 Advisory Board.

g. Provide mentoring and oversight of District Ordnance and Explosives Safety Specialists (OESS) if utilized on the PDT.

2–8. 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. PM Districts will:

a. Assign qualified project managers. The PM will have required training and experience (see Appendix B) when munitions response is the primary objective for the project.

b. Utilize the technical and procurement services of an authorized MMDC for M2S2-related activities (see paragraph 1-15). In coordination with the MMDC, develop and approve a PMP in line with ER 5-1-11, documenting concurrence with the PMP by the supporting MMDC. The PMP serves as the execution agreement between the PM District and the MMDC for a project. The PMP includes assignment of all mandatory roles and responsibilities required for project execution, definition of project goals, programmed schedule and budget for execution 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. For conventional munitions-related projects, a qualified OESS at the District may be utilized, but services must be rendered to the project through the MMDC, this includes following MMDC Standard Operating Procedures (SOPs) and reporting requirements. Hiring of OESS personnel at a PM District not aligned with a designated MMDC requires prior approval from the M2S2 Advisory Board.

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 in conjunction with the MMDC Technical Lead using concepts of virtual teaming as necessary to meet all project requirements for safety, quality, and acquisitions.

(3) Must utilize qualified personnel from a MMDC to perform the mandatory functional roles unless approved otherwise by the Chief of the supporting MMDC.

(4) When USACE is responsible for executing program, it is responsible for all activities related to public affairs, real estate (e.g., rights of entry), regulatory coordination, legal and regulatory compliance. In a Work For Others situation, the Project Manager will work under the direction of the agency implementing the project who will be responsible for all activities related to public affairs, real estate (e.g., rights of entry), regulatory coordination, legal and regulatory compliance.

(5) 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 Performance Work Statement development), and communications. The M2S2-related aspects of the PMP should be reviewed and updated at least annually.

(6) In coordination with the MMDC Technical Lead, 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.

(7) Ensures PDT members agree with responses to regulatory review comments and comments generated through the USACE independent technical review process prior to formal submission.

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

2–9. Engineer Research and Development Center

The ERDC:

a. Conducts research, development, test, and evaluation activities in support of M2S2 and operational range sustainment activities.

b. Provides SME technical assistance to USACE organizations on M2S2-related research, development, test, and evaluation topics as requested.

2–10. Project Delivery Team member qualifications

To better define and promote development of qualified PDT members, Appendix B contains a table indicating minimum qualifications and training required for mandatory PDT members (Table B–1) and knowledge/training/experience desired of technical and support functional disciplines (Table B–2 and Table B–3) typically assigned to address the M2S2-related aspects of a project. The M2S2 SharePoint site (<https://team.usace.army.mil/sites/HQ-MP/PDT/M2S2/default.aspx>) provides example mentoring plans and checklists for each mandatory PDT discipline and can be used to document training taken or planned, and to indicate that basic documents and processes have been discussed with everyone. These checklists can be maintained by the individual's supervisor or assigned mentor and used to foster career development.

Appendix A References

Section I

Required Publications

Unless otherwise indicated, all U.S. Army Corps of Engineers publications are available on the USACE website at <https://publications.usace.army.mil>. Army publications are available on the Army Publishing Directorate website at <https://armypubs.army.mil>. DoD Publications are available on the ESD website at <https://www.esd.whs.mil>.

32 CFR 179.3

Munitions Response Site Prioritization Protocol (MRSPP) Definitions (Available at <https://www.govinfo.gov/>)

AR 350-19

The Army Sustainable Range Program

AR 420-1

Army Facilities Management

DA Pam 385-64

Ammunition and Explosives Safety Standards

(Note: If work is performed for other agencies or components, agency or component specific explosives safety standards and regulations may apply.)

DA Pam 420-1-2

Army Military Construction and Nonappropriated-Funded Construction Program Development and Execution

Deputy Assistant Secretary of the Army for Environmental Safety and Occupational Health (SAIE-ESOH) memorandum of 1 April 2009

Interim Guidance for Chemical Warfare Materiel Responses (or subsequent guidance provided by the Army as the DoD Executive Agent for the Recovered Chemical Warfare Material Program within the United States or issued by DoD as a DoD issuance) Contact the CWM Design Center, see Table 1–2, for information. (Available at <https://team.usace.army.mil/sites/HQ-MP/CE/FUDS/SitePages/Resources.aspx>)

DESR 6055.09

Defense Explosives Safety Regulation (Available at <https://www.denix.osd.mil/ddes/home/>)

DoDI 4000.19

Support Agreements

DoDI 4715.07

Defense Environmental Restoration Program

DoDM 4715.20

Defense Environmental Restoration Program Management

EM 200-1-15

Technical Guidance for Military Munitions Response Actions

EM 385-1-97

Explosives Safety and Health Requirements Manual

EP 75-1-3

Recovered Chemical Warfare Materiel Response Process

ER 5-1-10

USACE Work Assignments and Responsibility

ER 5-1-11

USACE Business Process

ER 10-1-22

U.S. Army Engineering and Support Center, Huntsville

ER 10-1-50

U.S. Army Corps of Engineers Environmental and Munitions Mandatory Center of Expertise

ER 200-1-5

Policy for Implementation and Integrated Application of the U.S. Army Corps of Engineers Environmental Operating Principles and Doctrine

ER 200-3-1

Formerly Used Defense Sites Program Regulation

ER 385-1-95

Safety and Health Requirements for Operations and Activities Involving Munitions and Explosives of Concern Operations

ER 1140-1-211

Support for Others-Reimbursable Services

Formerly Used Defense Sites Handbook

(Available at https://team.usace.army.mil/sites/HQ-MP/CE/FUDS/Resources/FUDS%20Handbook_FINAL_2Dec2022.pdf)

Section II**Prescribed Forms**

This section contains no entries.

Appendix B

Project Delivery Team Member Qualifications

The following tables list the types of training and experience necessary to successfully execute M2S2 work. The tables are divided into three 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 required Training, Knowledge and Experience an individual should have to be considered qualified to perform that function independently. Junior staff with no, or little, M2S2-related Knowledge/Training/Experience can be assigned to M2S2 PDTs but are expected to be assigned a mentor who will ensure they complete the minimum required training as well as a MMDC or EM CX mentoring program (See the M2S2 SharePoint site at <https://team.usace.army.mil/sites/HQ-MP/PDT/M2S2/default.aspx> for example mentoring plans). Individuals and supervisors can use these tables to help plan and promote career development.

B-1. Mandatory functional roles

The mandatory disciplines shown below are always required on the PDT when developing and awarding contracts, planning, or executing military munitions response actions and range clearance projects. For all other M2S2 activities, these functions may be modified or combined depending on the scope of sponsoring agency requirements and complexity of the project. Known sources of required training are provided below; however, the requirement can be met by equivalent training or experience from other sources.

Table B-1
Mandatory Project Delivery Team Membership

Discipline	Roles/Responsibilities	Minimum Required Training and Experience ¹	Recommended Knowledge/Training /Experience
Project Manager (M2S2 qualified)	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.	Meets organization requirements for assignment as PM, and CERCLA and RCRA Concepts (PROSPECT Course 356, OR Environmental Protection Agency [EPA] Course Superfund 101, OR equivalent training, education, or experience), and Systematic Planning Process for MMRP (FUDS 406/505, OR EDQW MR-QAPP), and Planning/Executing a Remedial Investigation Study (FUDS	For additional FUDS Specific training see the FUDS Training Plan at https://www.hnc.usace.army.mil/Media/Fact-Sheets/Fact-Sheet-Article-View/Article/482097/environmental-and-munitions-center-of-expertise-available-training/ Recommend for all:

Discipline	Roles/Responsibilities	Minimum Required Training and Experience ¹	Recommended Knowledge/Training /Experience
		<p>Course 210/501, OR USAEC MMRP 101), and</p> <p>Planning/Executing a Remedial Action (FUDS [208/209]/502, OR USAEC MMRP 201)</p> <p>Environmental Data Management (FUDS 423/462, OR USAEC equivalent)</p>	<p>SERDP and ESTCP Webinar Series https://www.serdp-estcp.org/Tools-and-Training/Webinar-Series</p> <p>Recommend for Chem, Geo, Risk, etc.:</p>
Technical Lead (M2S2 qualified)	Coordinates all munitions response-related technical activities in support of the PM and PDT with a focus on safety, quality, and acquisitions.	<p>Meets organization requirements for assignment to perform one of the mandatory disciplines/functional roles defined in this table, and,</p> <p>CERCLA and RCRA Concepts (PROSPECT Course 356, OR EPA Course Superfund 101, OR equivalent training, education, or experience), and</p> <p>Systematic Planning Process for MMRP (FUDS 406/505, OR EDQW MR-QAPP), and</p> <p>MMRP Technical Requirements (FUDS 213/581), and</p> <p>Planning/Executing a Remedial Investigation and Feasibility Study (FUDS Course 210/501, OR USAEC MMRP 101), and</p> <p>Planning/Executing a Remedial Action (FUDS [208/209]/502, OR USAEC MMRP 201), and</p> <p>Environmental Data Management (FUDS 423/462, OR USAEC equivalent), and</p> <p>Geophysics Concepts (FUDS Course 403/541, OR ITRC Course Geophysical Classification for Munitions Response), and</p>	<p>SERDP and ESTCP Program Area – Managing Contaminants on Ranges https://www.serdp-estcp.org/Program-Areas/Environmental-Restoration/Contaminants-on-Ranges</p>

Discipline	Roles/Responsibilities	Minimum Required Training and Experience ¹	Recommended Knowledge/Training /Experience
		Munitions Constituent Concepts (FUDS Course 425/563), and Explosives Safety (FUDS Course 404/522)	
OESS	Ensures the safe delivery of M2S2 IAW 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.	<p>Graduate of a U.S. Military EOD School, and</p> <p>Training requirements established in DDESB TP 27 and DA PAM 385-64, and</p> <p>CERCLA and RCRA Concepts (PROSPECT Course 356, OR EPA Course Superfund 101, OR equivalent training, education, or experience), and</p> <p>Explosives Safety for OE Safety Specialists (FUDS Course 204/521), and</p> <p>DDESB TP-16 Tools, and</p> <p>MMRP Technical Requirements (FUDS 213/581), and</p> <p>Systematic Planning Process for MMRP (FUDS 406/505, OR EDQW MR-QAPP), and</p> <p>Has completed required mentoring under a qualified MMDC or EM CX OESS.</p>	
Geophysicist	Provides technical expertise and quality oversight of all geophysical activities during project planning, acquisitions, field operations, data	Meets organization requirements for assignment as geophysicist, and,	

Discipline	Roles/Responsibilities	Minimum Required Training and Experience ¹	Recommended Knowledge/Training /Experience
	submissions, and reporting.	<p>Meets organization requirements for assignment as geophysicist, and,</p> <p>Military Munitions Response Program EM 200-1-15 (FUDS 213), and</p> <p>FUDS MMRP - Remedial Action and Achieving the Goals of the DD (FUDS 208), and</p> <p>FUDS MMRP - Getting to the Remedy (FUDS 209), and</p> <p>FUDS MMRP - Phased RI Approach using the MR-QAPP Toolkit (FUDS 210), and</p> <p>MMRP Geophysics Overview (FUDS 403), and</p> <p>MMRP Design: Updates, Best Practices, and Lessons Learned (FUDS 418), and</p> <p>CERCLA and RCRA Concepts (PROSPECT Course 356, OR equivalent training, education, or experience), and</p> <p>Visual Sample Plan (VSP) online</p> <p>Has completed required mentoring under a qualified MMDC or EM CX geophysicist.</p>	

Discipline	Roles/Responsibilities	Minimum Required Training and Experience ¹	Recommended Knowledge/Training /Experience
Chemist	Provides technical expertise and quality oversight of all chemistry activities during project planning, acquisitions, field operations, data submissions, and reporting.	<p>Meets organization requirements for assignment as chemist, and,</p> <p>CERCLA and RCRA Concepts (PROSPECT Course 356, OR EPA Course Superfund 101, OR equivalent training, education, or experience), and</p> <p>MMRP Technical Requirements (FUDS 213/581), and</p> <p>Planning/Executing a Remedial Investigation and Feasibility Study (FUDS Course 210/501, OR USAEC MMRP 101), and</p> <p>Planning/Executing a Remedial Action (FUDS [208/209]/502, OR USAEC MMRP 201), and</p> <p>Environmental Data Management (FUDS 423/462, OR USAEC equivalent), and</p> <p>Advanced Munitions Constituents Concepts (FUDS Course 203/562 OR equivalent training or education) and</p> <p>Incremental Sampling Methodology: ITRC Soil Sampling and Decision Making Using Incremental Sampling Methodology - Parts 1 and 2, Archived at clu-in.org OR equivalent training, and</p> <p>Project-Specific Chemical Data Quality Management (FUDS 323/461 OR equivalent training or education), and</p> <p>Advanced Data Management (FUDS 464, OR equivalent training or education), and</p>	

Discipline	Roles/Responsibilities	Minimum Required Training and Experience ¹	Recommended Knowledge/Training /Experience
		Has completed required mentoring under a qualified MMDC or EM CX chemist.	
Risk Assessor	Provides technical expertise and quality oversight of all risk assessment activities during project planning, acquisitions, field operations, data submissions, and reporting.	<p>Meets organization requirements for assignment as a risk assessor, and,</p> <p>CERCLA and RCRA Concepts (PROSPECT Course 356, OR EPA Course Superfund 101, OR equivalent training, education, or experience), and</p> <p>Planning/Executing a Remedial Investigation and Feasibility Study (FUDS Course 210/501, OR AEC MMRP 101), and</p> <p>CERCLA Human Health Risk Assessment (FUDS Course 316/405, OR equivalent training), and</p> <p>CERCLA Ecological Risk Assessment (FUDS Course 317/406, OR equivalent training), and</p> <p>Advanced Munitions Constituents Concepts (FUDS Course 203/562 OR equivalent training or education), and</p> <p>Visual Sample Plan (VSP), and</p> <p>Has completed required mentoring under a qualified MMDC or EM CX risk assessor.</p>	
Geospatial Information System (GIS) Specialist	Provides technical expertise and quality oversight of all GIS-related activities during project planning, acquisitions, field operations, data submissions, and reporting.	<p>This function can be performed by any technical discipline having GIS experience and the specific training listed here.</p> <p>GIS Introduction (PROSPECT Course 205) Within 1 year of role assignment, and</p>	

Discipline	Roles/Responsibilities	Minimum Required Training and Experience ¹	Recommended Knowledge/Training /Experience
		<p>GIS Intermediate (PROSPECT Course 167) Within 5 years of role assignment, and</p> <p>CERCLA and RCRA Concepts (PROSPECT Course 356, OR EPA Course Superfund 101, OR equivalent training, education, or experience), and</p> <p>Systematic Planning Process for MMRP (FUDS 406/505, OR EDQW MR-QAPP), and</p> <p>MMRP Technical Requirements (FUDS 213/581), and</p> <p>MMRP Geophysics Overview (FUDS 403/541), and</p> <p>MMRP Design: Updates, Best Practices, and Lessons Learned (FUDS 418/542)</p>	

¹FUDS courses listed with two numbers (123/345) indicates the current course number (123) and the new course number (345) beginning in FY25, either course fulfills the requirement regardless of date taken. If specific courses cannot be found, contact the FUDS Training coordinator at the EM CX for assistance.

B-2. 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.
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 (SPP, UFP QAPP, DQO) MMRP Technical Requirements CERCLA and RCRA Concepts Chemical Data Quality Management Basic Geophysics Concepts Basic Munitions Constituent Concepts Incremental Sampling Methodology
Biologist	Provides technical expertise to ensure that all project activities are performed in compliance with all applicable regulatory requirements, including identifying any potential critical habitats and/or threatened or endangered species during project execution.	MMRP Technical Requirements Explosives Safety Concepts
Archaeologist/Cultural Expert	Provides technical expertise to ensure that all project activities are performed in compliance with all applicable regulatory requirements and must meet the Secretary of the Interior's Professional Qualification Standards for Archaeology.	MMRP Technical Requirements Explosives Safety Concepts

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 Technical Requirements Utilization of Historical Records and Common Operations Reports CERCLA and RCRA Concepts Federal Regulations Concepts DoD and Service Regulations and Policies Selection of ARARs Explosives Safety Concepts Systematic Project Planning (SPP, 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 Munitions Constituents Treatment Processes/Systems Explosives Safety Concepts Green and Sustainable Remediation Systematic Project Planning (SPP, UFP QAPP, DQO) MMRP Principles and Practices CERCLA and 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	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

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.
	implementation of PPE, monitoring, and engineering controls.	

B-3. 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 Technical Requirements CERCLA and RCRA Concepts Federal Regulations Concepts DoD and Service Regulations and Policies, Fiscal and Contracting support, USACE lead projects-compliance with laws, regulations, and policy (such as, FUDS, CW)
Public Affairs Specialist	Provide public affairs support as needed to the PM and PDT.	MMRP Technical Requirements Explosives Safety Concepts Basic Geophysics Concepts

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.
		Basic Munitions Constituent Concepts
Cost Engineer/ Estimator	Provide cost estimating support as needed to the PM and PDT.	MMRP Technical Requirements CERCLA and 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 Technical Requirements Explosives Safety Concepts
Contracting Officer's Representative (COR)	Serve as COR when a M2S2-related contract is needed.	MMRP Technical Requirements CERCLA and RCRA Concepts Systematic Project Planning (SPP, 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 Technical Requirements Explosives Safety Concepts
Real Estate Specialist	Provide real estate support as needed to the PM and PDT.	MMRP Technical Requirements